

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, \$300

SPECIAL FOURTH-CLASS RATE
POSTAGE & FEES PAID
USNRC
PERMIT No. G-67

STUDENT'S GUIDE

FOR

AVIATION STRUCTURAL MECHANIC E

(SAFETY EQUIPMENT) COURSE

CLASS A1

C-602-2015

UNIT 2 -- TECHNICAL PUBLICATIONS

PREPARED BY

NAVAL AIR TECHNICAL TRAINING CENTER

NAVAL AIR STATION MEMPHIS

MILLINGTON, TENNESSEE 38054

CNTT-M1633

PREPARED FOR

CHIEF OF NAVAL TECHNICAL TRAINING

Date

August 1983

TABLE OF CONTENTS

	Page
FRONT MATTER	
Foreword	i
Safety Notice	ii
How to Use This Student's Guide	iii
Learning Objectives	iv
LESSON TOPICS	
2.1 FUNCTIONS OF AN ORGANIZATIONAL MAINTENANCE ACTIVITY	
Notetaking Sheet	1
Assignment Sheet	11
2.2 TOOL CONTROL PROCEDURES	
Notetaking Sheet	14
Assignment Sheet	23
2.3 INTRODUCTION TO PUBLICATIONS	
Notetaking Sheet	25
Assignment Sheet	47
2.4 LOCATING MAINTENANCE INSTRUCTION FOR AIRCRAFT COMPONENTS	
Notetaking Sheet	51
Job Sheets	57
Assignment Sheet	75
2.5 LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS	
Notetaking Sheet	77
Job Sheets	89
Assignment Sheet	105
2.6 INTERPRETATION OF AIRCRAFT SCHEMATIC DIAGRAMS	
Notetaking Sheet	107
Job Sheets	113
Assignment Sheet	123

	Page
2.7 VIDS MAF/SAF/SCIR	
Notetaking Sheet	125
Job Sheets	147
Assignment Sheet	151
2.8 MAINTENANCE OF SHOP SUPPORT EQUIPMENT	
Job Sheet	153
Unit 2 Grade Sheet	155
Glossary of Terms	156
Blank VIDS/MAFs	166

FOREWORD

The purpose of this Student's Guide is to direct your progress through this unit of the Aviation Structural Mechanic E (Safety Equipment) Course, Class A1. By following this guide, you will take notes that will be of assistance to you as you progress through this unit.

The Table of Contents lists the page numbers for the learning objectives, safety notice, and other instructions for using this guide. Notetaking and assignment sheets are listed according to lesson topics.

HOW TO USE THIS STUDENT'S GUIDE

This Student's Guide has been prepared for you to use while attending the Aviation Structural Mechanic E (Safety Equipment) A1 Course. The notetaking sheets will provide you with ample space for taking notes on the required lesson information.

This volume contains the following types of instruction sheets:

1. Assignment sheets for each lesson topic to direct your homestudy efforts.
2. Notetaking sheets containing both lesson topic outlines and ample blank space for personal notetaking.
3. Job sheets, as required, will guide you step-by-step in a practical work assignment.
4. Information sheets contain information in a narrative format to expand upon the lesson topics.

LESSON TOPIC 2.1

FUNCTIONS OF AN ORGANIZATIONAL MAINTENANCE ACTIVITY

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.1. SELECT, from given lists, the purpose(s) of the VIDS/MAF and the SAF, in accordance with OPNAVINST 4790.2 (series).
- 1.6. RECORD maintenance and Subsystems Capability and Impact Reporting (SCIR) information, including SCIR and EOC codes, for specified maintenance actions on the VIDS/MAF, in accordance with OPNAVINST 4790.2 (series) and OPNAVINST 5442.4 (series). All entries must be legible and correct.

(These objectives are entirely supported by this lesson topic.)

- 1.1.1. MATCH, from given lists, management personnel with their responsibilities within an organizational maintenance activity.
- 1.1.2. SELECT, from a given list, three staff divisions of an organizational maintenance activity.
- 1.1.3. MATCH, from given lists, production divisions of an organizational maintenance activity with their functions.
- 1.1.4. SELECT, from a given list, maintenance forms that are used to control maintenance tasks.

LESSON TOPIC 2.2

TOOL CONTROL PROCEDURES

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.6. RECORD maintenance and Subsystem Capability and Impact Reporting (SCIR) information, including SCIR EOC codes, for specified maintenance actions on the VIDS/MAF, in accordance with OPNAVINST 4790.2 (series) and OPNAVINST 5442.4 (series). All entries must be legible and correct.
- 2.4. MAINTAIN tool control procedures as outlined in the OPNAVINST 4790.2 (series) current instruction, documenting actions in accordance with Job Sheet.

(These objectives are entirely supported by this lesson topic.)

- 1.3.1. SELECT, from a given list, the primary purpose of the tool control program.
- 1.3.2. SELECT, from a given list, the concept of the tool control program.
- 1.3.3. SELECT, from a given list, four advantages of the tool control program.
- 1.3.4. SELECT, from a given list, who is responsible for conducting toolbox sight inventories.
- 1.3.5. SELECT, from a given list, how tools are identified.

LESSON TOPIC 2.3

INTRODUCTION TO PUBLICATIONS

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.2. MATCH, from given lists, the purposes of five 01-series manuals with the appropriate names and numbers, according to information provided in NA 00-25-100.
- 1.3. SELECT, from a given list, the statement that describes the information contained in a current series Work Unit Code Manual, according to information provided in NA 00-25-100.
- 1.4. SELECT, from a given list, the statement that describes the information contained in the Illustrated Parts Breakdown, according information provided in NA 00-25-100.
- 1.5. SELECT, from a given list, the information contained in a Maintenance Instructions Manual, according to information provided in NA 00-25-100.

(These objectives are entirely supported by this lesson topic.)

- 1.2.1. SELECT, from a given list, the purpose of publications.
- 1.2.2. SELECT, from a given list, two types of publications.
- 1.2.3. SELECT, from a given list, letter publications on policy.
- 1.2.4. SELECT, from a given list, three types of letter publications.
- 1.2.5. SELECT, from a given list, manual publications that apply to the AME rating.

LESSON TOPIC 2.2

TOOL CONTROL PROCEDURES

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.6. RECORD maintenance and Subsystem Capability and Impact Reporting (SCIR) information, including SCIR EOC codes, for specified maintenance actions on the VIDS/MAF, in accordance with OPNAVINST 4790.2 (series) and OPNAVINST 5442.4 (series). All entries must be legible and correct.
- 2.4. MAINTAIN tool control procedures as outlined in the OPNAVINST 4790.2 (series) current instruction, documenting actions in accordance with Job Sheet.

(These objectives are entirely supported by this lesson topic.)

- 1.3.1. SELECT, from a given list, the primary purpose of the tool control program.
- 1.3.2. SELECT, from a given list, the concept of the tool control program.
- 1.3.3. SELECT, from a given list, four advantages of the tool control program.
- 1.3.4. SELECT, from a given list, who is responsible for conducting toolbox sight inventories.
- 1.3.5. SELECT, from a given list, how tools are identified.

LESSON TOPIC 2.3

INTRODUCTION TO PUBLICATIONS

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.2. MATCH, from given lists, the purposes of five 01-series manuals with the appropriate names and numbers, according to information provided in NA 00-25-100.
- 1.3. SELECT, from a given list, the statement that describes the information contained in a current series Work Unit Code Manual, according to information provided in NA 00-25-100.
- 1.4. SELECT, from a given list, the statement that describes the information contained in the Illustrated Parts Breakdown, according information provided in NA 00-25-100.
- 1.5. SELECT, from a given list, the information contained in a Maintenance Instructions Manual, according to information provided in NA 00-25-100.

(These objectives are entirely supported by this lesson topic.)

- 1.2.1. SELECT, from a given list, the purpose of publications.
- 1.2.2. SELECT, from a given list, two types of publications.
- 1.2.3. SELECT, from a given list, letter publications on policy.
- 1.2.4. SELECT, from a given list, three types of letter publications.
- 1.2.5. SELECT, from a given list, manual publications that apply to the AME rating.

- 1.2.6. SELECT, from a given list, three advantages of the Maintenance Information Automatic Retrieval System (MIARS).
- 1.2.7. SELECT, from a given list, the two methods of updating manual publications.
- 1.2.8. SELECT, from a given list, the type of maintenance performed by following maintenance requirement cards.
- 1.2.9. SELECT, from a given list, the purpose of the publications-numbering system.
- 1.2.10. SELECT, from a given list, classifications of publications.
- 1.2.11. SELECT, from a given list, two types of MIARS equipment.

LESSON TOPIC 2.4

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(This objective is supported partially by this lesson topic.)

- 1.2. MATCH, from given lists, the purpose of five 01-series manuals with the appropriate names and numbers, according to information provided in NA 00-25-100.

(These objectives are entirely supported by this lesson topic.)

- 1.5. SELECT, from a given list, the information contained in a Maintenance Instructions Manual (MIM), according to information provided in NA 00-25-100.
 - 1.5.1. SELECT, from a given list, the three major parts of the MIM's.
 - 1.5.2. SELECT, from a given list, the purpose of a Maintenance Instructions Manual.
 - 1.5.3. SELECT, from a given list, the title and the section of the MIM that relates to aircraft servicing.
 - 1.5.4. SELECT, from a given list, the title and the section of the MIM that relates to aircraft handling.
 - 1.5.5. SELECT, from a given list, the title and the section of the MIM that relates to aircraft ground safety.
 - 1.5.6. SELECT, from a given list, the title and the section of the MIM that relates to lubrication of the aircraft.
 - 1.5.7. SELECT, from a given list, the title and the section of the MIM that relates to support equipment.

- 1.5.8. SELECT, from a given list, the title and the section of the MIM that relates to consumable materials.
- 1.5.9. SELECT, from a given list, the title and the section of the MIM that relates to the description of organizational maintenance.
- 1.5.10. SELECT, from a given list, the source of power that is used to operate the portable MIARS reader.
- 1.5.11. LOCATE, from the table of contents in the "Maintenance Instruction Manual: General Information, and Servicing", maintenance information, and record the information on the job sheet.
- 1.5.12. LOCATE, from the alphabetical index in the "Maintenance Instruction Manual: General Information and Servicing", maintenance information and record the information on the job sheet.
- 1.5.13. LOCATE, from the table of contents in the "Maintenance Instruction Manual: Personnel Environment Systems", maintenance information, and record the information on the job sheet.
- 1.5.14. LOCATE, from the alphabetical index in the "Maintenance Instruction Manual: Personnel Environment Systems", maintenance information, and record the information on the job sheet.
- 1.5.15. LOCATE, from the "Maintenance Instruction Manual: Personnel Environment Systems", organizational maintenance information, and record the information on the job sheet.
- 1.5.16. LOCATE, from the table of contents in the "Maintenance Instruction Manual: Canopy and Survival Systems", maintenance information, and record the information on the job sheet.
- 1.5.17. LOCATE, from the alphabetical index in the "Maintenance Instruction Manual: Canopy and Survival Systems", maintenance information, and record the information on the job sheet.
- 1.5.18. LOCATE, from the "Maintenance Instruction Manual: Canopy and Survival Systems", organizational maintenance information, and record the information on the job sheet.

- 1.5.19. LOCATE, from the appropriate MIARS Microfilm, specific servicing information, and record the information on the job sheet.
- 1.5.20. LOCATE, from the appropriate MIARS Microfilm, o-ring and backup data, and record the information on the job sheet.
- 1.5.21. LOCATE, from the appropriate MIARS microfilm, specific maintenance safety precautions, and record them on the job sheet.
- 1.5.22. LOCATE, from the appropriate MIARS microfilm, specific maintenance information, and record them on the job sheet.
- 1.5.23. LOCATE, from the appropriate MIARS microfilm maintenance information related to special tools, support equipment, and consumables, and record the information on the job sheet.

LESSON TOPIC 2.5

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are supported partially by this lesson topic.)

- 1.2. MATCH, from a given list, the purposes of five 01-series manuals with the appropriate names and numbers, according to information provided in NA 00-25-100.

(These objectives are entirely supported by this lesson topic.)

- 1.4. SELECT, from a given list, the statement that describes the information contained in the Illustrated Parts Breakdown, according to information provided in NA 00-25-100.
 - 1.4.1. SELECT, from a given list, the purpose of the Illustrated Parts Breakdown Manual.
 - 1.4.2. SELECT, from a given list, the organization of the Illustrated Parts Breakdown Manual.
 - 1.4.3. SELECT, from a given list, the organization of the MIARS Illustrated Parts Breakdown Manual.
 - 1.4.4. SELECT, from a given list, the procedures for the procurement of aviation material.
 - 1.4.5. LOCATE and RECORD on the appropriate job sheet, the information required for ordering replacement parts from the Illustrated Parts Breakdown Manual, when the Part Number is KNOWN.

- 1.4.6. LOCATE the Data explanation of source code, accountability, and recoverability codes in the General Information and Numerical Index of the Illustrated Parts Breakdown.
- 1.4.7. LOCATE and RECORD on the appropriate Job Sheet, the information for ordering replacement parts, from the Illustrated Parts Breakdown Manual, when the Part Number is UNKNOWN.

LESSON TOPIC 2.6

INTERPRETATION OF AIRCRAFT SCHEMATIC DIAGRAMS

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(This objective is supported partially by this lesson topic.)

- 1.5. SELECT, from a given list, the information contained in a Maintenance Instructions Manual, according to information provided in NA 00-25-100.

(These objectives are entirely supported by this lesson topic.)

- 1.5.24. SELECT, from a given list, the definition of aircraft diagrams.
- 1.5.25. SELECT, from a given list, the purpose of a schematic diagram.
- 1.5.26. SELECT, from a given list, the purpose of an installation diagram.
- 1.5.27. MATCH the symbols used to identify components in schematic diagrams with their proper nomenclature.
- 1.5.28. Using schematic diagrams provided, TRACE fluid flow and LABEL components using proper identification symbols.

LESSON TOPIC 2.7

VIDS MAF/SAF/SCIR

TERMINAL OBJECTIVE

(This objective is partially supported by this lesson topic.)

- 1.0. SELECT the correct 01-series manual in which to reference five given maintenance related problems, according to information provided in NA 00-25-100. Locate the problem solutions and record the solutions on appropriate source documents, in accordance with OPNAVINST 4790.2 (series). A maximum of two trials will be allowed for each of the five problems.

ENABLING OBJECTIVES

(These objectives are entirely supported by this lesson topic.)

- 1.1. SELECT, from given lists, the purpose(s) the VIDS/MAF and the SAF, in accordance with OPNAVINST 4790.2 (series).
- 1.1.5. SELECT, from a given list, the purpose of the VIDS/MAF.
- 1.1.6. SELECT, from a given list, the portions of the VIDS/MAF that will be completed by the maintenance control work center before routing it to the appropriate work center.
- 1.1.7. SELECT, from a given list, the blocks of the VIDS/MAF that are completed by the worker.
- 1.1.8. SELECT, from a given list, the blocks of the VIDS/MAF that are completed by the worker from coded information extracted from the Work Unit Code Manual.
- 1.1.9. SELECT, from a given list, the purpose of the SAF.
- 1.1.10. SELECT, from a given list, the blocks of the SAF that will be completed by the worker.

(This objective is partially supported by this lesson topic.)

- 1.6. RECORD maintenance and Subsystem Capability and Impact Reporting (SCIR) information, including SCIR and EOC codes, for specified maintenance actions on the VIDS/MAF, in accordance with OPNAVINST 4790.2 (series) and OPNAVINST 5442.4 (series). All entries must be legible and correct.

LESSON TOPIC 2.8

MAINTENANCE OF SHOP SUPPORT EQUIPMENT

TERMINAL OBJECTIVE: None.

ENABLING OBJECTIVES

(These objectives are partially supported by this lesson topic.)

- 1.7. PERFORM routine maintenance and cleaning of classroom and shop equipment in accordance with course instructions.
- 2.4. MAINTAIN tool control procedures as outlined in the OPNAVINST 4790.2 (series) current instruction, documenting actions in accordance with Job Sheet.

NOTETAKING SHEET 2.1.1N

FUNCTIONS OF AN ORGANIZATIONAL MAINTENANCE ACTIVITY

REFERENCE:

The Naval Aviation Maintenance Program (NAMP),
OPNAVINST 4790.2 (latest rev.), Volume II.

NOTETAKING OUTLINE

A. Management responsibilities (see Figure 2.1-1).

1. Maintenance officer

- a. Is responsible for the overall control of the maintenance department.
- b. Is directly responsible to the _____ for the accomplishment of the mission of the activity.
- c. Establishes procedures and delegates authority to subordinates to carry out the mission of the activity with maximum efficiency and economies.
- d. Ensures that all _____ are in effect, such as foreign object damage prevention, corrosion control, and continuous training programs.

2. Assistant maintenance officer

- a. Assists the maintenance officer in the performance of his duties and keeps him fully informed of matters pertaining to the maintenance department.
- b. Makes recommendations to the maintenance officer concerning _____ of department facilities.
- c. Has direct supervision of the _____ and reviews all correspondence requiring action by the activity.
- d. Assigns all maintenance personnel to _____ .
- e. Inspects all maintenance spaces and acts as administrative officer.
- f. Establishes and coordinates the maintenance department _____ .

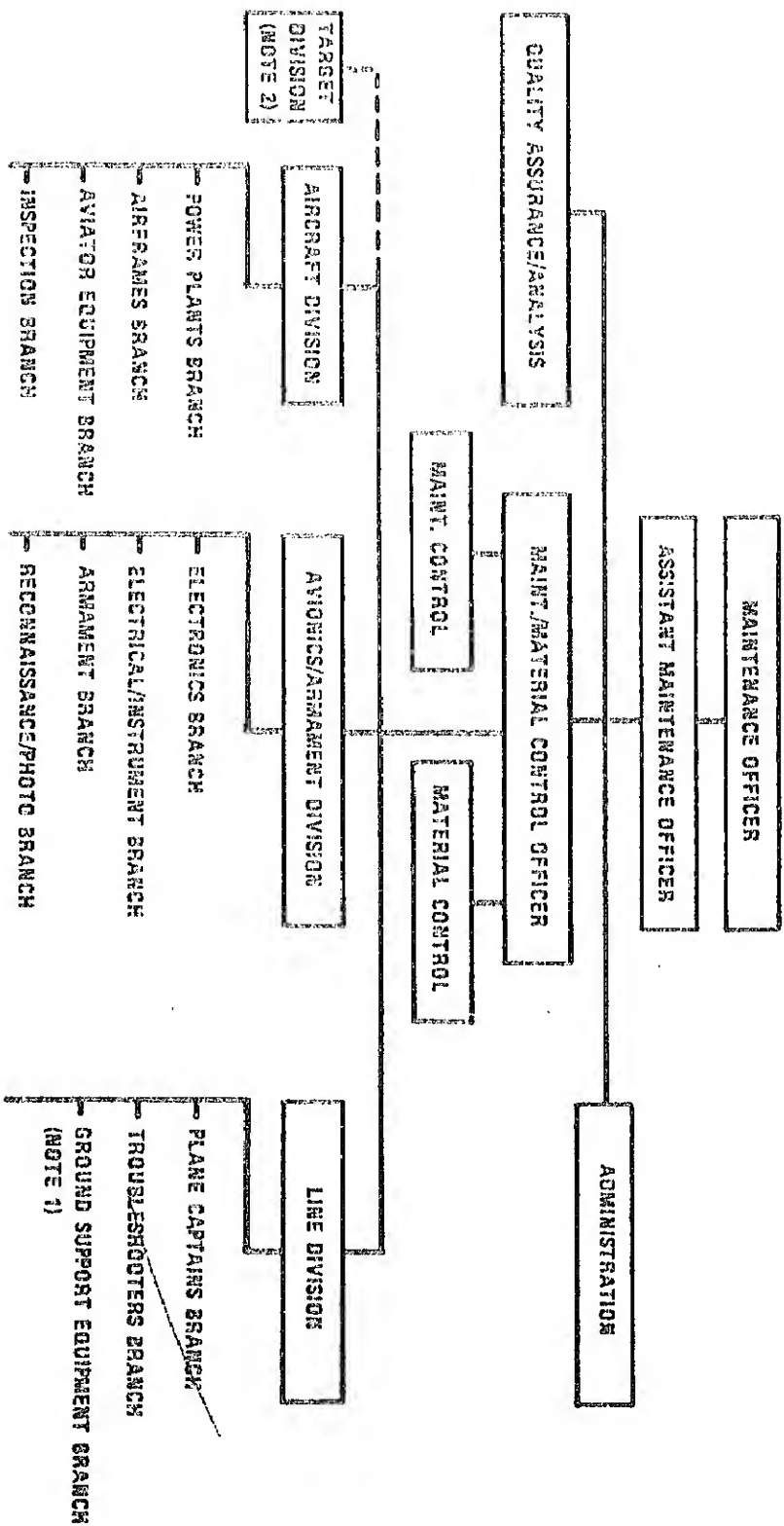


FIGURE 2.1-1.--Navy Organizational Level Maintenance Department Organization.

3. Division officer

- a. Organizes the division to ensure effective accomplishment of the tasks assigned, ensures quality and quantity of work, and _____ to billets in division.
 - b. Prepares, when required, maintenance instructions and ensures security of aircraft, tools, equipment, and spaces assigned to division.
 - c. Establishes _____, complies with instructions or prepares safety instructions, supports all preventive maintenance programs, and maintains liaison with other members of the maintenance department.
 - d. Oversees quality assurance and analysis, maintenance and material control, administration as well as aircraft, avionics and armament, and line divisions.
4. Branch officer: when assigned, assumes the duties of a _____ and the management responsibilities of the division for maintenance tasks assigned to the branch.
5. Work center supervisor: the manager of a particular shop or maintenance area. Duties include:
- a. Ensuring the accomplishment of assigned work.
 - b. Ensuring maximum utilization of personnel and facilities.
 - c. Requiring all work to be inspected by a qualified inspector.
 - d. Screening all source documents, records, and reports to ensure _____, completeness, and timeliness of submission.
 - e. Being _____ for the tool control program in ship or maintenance area.

B. Staff divisions

1. Quality assurance and analysis division: organized with a relatively small group of highly skilled personnel. Its overall responsibilities are to _____ and _____ the quality assurance and analysis programs of the department.
 - a. Quality assurance: The concept of the quality assurance program is to _____ the occurrence of defects. Functions are:
 - (1) To maintain a master technical library for the activity.
 - (2) To ensure all quality assurance representatives and collateral duty inspectors meet established requirements and are monitored periodically to recheck their qualifications.
 - (3) To ensure that established _____ are observed for all maintenance tasks.
 - (4) _____.
 - b. Analysis: The concept of the analysis program is to provide precise statistical information to the maintenance officer to enable him to continually review the management practices within his organization by:
 - (1) Managing, coordinating, and monitoring the maintenance data collection system (MDCS) for the department.
 - (2) Reviewing maintenance data reports (MDR) to discover and point out workload, personnel, and shortages of materials and equipment.
 - (3) Collecting, reviewing, and delivering source documents to data services for processing.
 - (4) Picking up completed data reports and distributing them throughout the organization.
 - (5) Maintaining an adequate supply of manuals, source documents, and registers to ensure continuity of the MDCS.
 - (6) Developing an analytical plan of all maintenance functions to provide periodic audits of work center performance.

2. Maintenance administration division: provides administrative services for the maintenance activity.
 - a. Establishes a report- and _____ system for maintenance department correspondence.
 - b. Handles the mail and controls classified matter (excluding technical manuals and letters).
 - c. Reproduces and distributes pertinent incoming directives, instructions, nontechnical information, and publications to personnel concerned.
 - d. Establishes maintenance department _____ and obtains _____ to support these requirements.
 - e. Provides adequate space, transportation, and communications to support the workload.

C. Production divisions

1. Maintenance and material control division: responsible for the overall productive effort and material support of the maintenance departments and divisions.
 - a. Maintenance control work center
 - (1) Maintenance control is the centralized control point through which all _____ must pass, such as aircraft status, operational commitments, _____, and personnel assets.
 - (2) To maintain control of aircraft maintenance, the visual information display system (VIDS) is used. It requires minimum manpower and paperwork yet produces maximum status information necessary for the control of maintenance.
 - (a) Using the VIDS, maintenance control assigns a _____ to each maintenance task.
 - (b) Maintenance control maintains an organizational maintenance register for each aircraft.
 - (c) Records are kept of all required maintenance and action required and pending. Necessary action is taken for reporting material readiness and flight data.

- (d) Maintenance control receives and files all completed VIDS/MAF's, technical directives control forms, and configuration control forms for historical records.
 - b. Material control work center: the contact point within the maintenance organization where requirements for _____ are coordinated with supply.
 - (1) Establishes pickup and delivery points for materials.
 - (2) Initiates surveys if accountable material or equipment is lost or damaged.
 - (3) Establishes proper toolroom procedures and performs periodic inventories of tools.
 - (4) Keeps maintenance control advised about supplies.
 - (5) Maintains a material control register on all parts and supplies ordered.
 - c. Tool control work center: ensures a standard tool control program for each aircraft and engine that is used.
- 2. Aircraft division
 - a. Supervises, coordinates, and completes _____ maintenance inspections and _____ maintenance.
 - b. Performs those applicable organizational maintenance functions related to assigned branches.
- 3. Avionics and armament divisions: performs organizational maintenance tasks relating to avionics and armament areas on the assigned aircraft.
- 4. Line division
 - a. Is responsible for maintenance that involves the day-to-day tasks and functions associated with _____
 - (1) Preflight, postflight, and daily inspections.
 - (2) Between flight replenishments (fuel, liquid oxygen, oil, etc.).
 - (3) Minor adjustments and checkout of installed aircraft equipment.

- b. Coordinates and directs the _____, who are normally assigned from work centers of other production divisions.
 - 5. Target division: A target division will be established when responsibilities to operation and maintenance of surface and aerial targets are needed.
 - D. Maintenance forms: Various inspections and periodic maintenance are designed to _____ defective components and _____ possible problems. The necessary maintenance and corrective action can then be taken before the discrepancy becomes a hazard to the correct operation of aircraft or its equipment. Some of the forms used to report discrepancies and record maintenance actions on are:
 - 1. Visual Information Display System/Maintenance Action Form (VIDS/MAF (5-part), OPNAV 4790/60). This is a five copy form used to report _____ and record _____ actions. Upon initiation of a VIDS/MAF, Maintenance Control will route the five copies as follows:
 - a. Copy 1 and 5- will be forwarded to the _____.
 - b. Copy 2- will be forwarded to _____.
 - c. Copy 3- will be retained in Maintenance Control and filed on the Maintenance Control VIDS board.
 - d. Copy 4- will be filed in the aircraft discrepancy book.
 - 2. VIDS boards---A VIDS board will provide a _____ of visual up to date information on a continuing basis. Scaled horizontally on VIDS boards are _____ pockets used to seat the VIDS/MAF. Types of boards are:
 - a. Organizational---flight and maintenance schedule board (maintenance control board); displays current _____, _____ each aircraft and displays scheduled and unscheduled maintenance discrepancies.
 - b. Material control status board: displays outstanding material _____, which lists aircraft model, work center, and document number.
 - c. Work center board: displays work assignments in work, awaiting maintenance, and awaiting parts. Also can display work assignments in conjunction with _____.
- Bottom pocket can be used to display status of ground support equipment.

- d. Intermediate maintenance schedule board: displays current status of all components being repaired by a production division of an intermediate maintenance activity.
- 3. Preflight, Acceptance, and Personal Record (Part A), OPNAV 3760/2D. (See Figure 2.1-2)
 - a. Used in the aircraft discrepancy book.
 - b. Used to prepare the aircraft for flight.
 - c. Plane captain will record the following information on the front of the Preflight, Acceptance, and Personnel Record (Part A):
 - (1) _____.
 - (2) Type/Model/Series of aircraft.
 - (3) Reporting custodian.
 - (4) _____.
 - (5) Fuel, in grade and quantity.
 - (6) _____.
 - (7) _____.
 - (8) Rate/rank and signature.
 - d. Maintenance officer or designated representative will sign the OPNAV 3760/2D to certify the aircraft
_____.
 - e. Pilot in command of mission will review any discrepancies in the aircraft discrepancy book and be the last to sign the OPNAV 3760/2D signifying he is taking the aircraft for flight.
 - f. Reverse side of the Part A will be used to record passenger data, if any.

PREFLIGHT ACCEPTANCE AND PERSONNEL RECORD

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

PART A

ORDNANCE/SPECIAL EQUIPMENT LIMITATIONS REMARKS		ORDNANCE INSPECTOR	
NAME/RATE		SIGNATURE OF PLANE CAPTAIN	
I HAVE PERSONALLY INSPECTED THIS AIRCRAFT IN ACCORDANCE WITH INSTRUCTIONS CONTAINED IN THIS FORM		ANY DISCREPANCIES NOTED HAVE BEEN ENTERED ON THIS FORM	
I HAVE INSPECTED THE LAST		DISCREPANCY REPORTS INSURED PROPER FILING	
OF WEIGHT & BALANCE DATA, AND ACCEPT THIS AIRCRAFT FOR FLIGHT			
NAME		SIGNATURE OF PILOT IN COMMAND	

FIGURE 2.1-2.--Preflight, Acceptance and Personnel Record (Part A).

ASSIGNMENT SHEET 2.1.1A

FUNCTIONS OF AN ORGANIZATIONAL MAINTENANCE ACTIVITY

INTRODUCTION

The organizational maintenance activity is responsible for the mechanical condition and maintenance of the aircraft for the activity. Therefore, it is important for you to understand the functions of each billet within the activity.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.1.

Supported entirely by this lesson topic:

1.1.1, 1.1.2, 1.1.3, and 1.1.4.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.1.1N.
2. Answer the following questions in the spaces provided.

STUDY QUESTIONS

1. Match management personnel listed in column A with their management responsibilities listed in column B. Place the correct letter from column B in the space provided in column A.

A	B
____ (1) Maintenance officer	a. Manages a particular shop.
____ (2) Assistant maintenance officer	b. Assumes the duties of the division officer and is responsible for the maintenance tasks assigned to the branch.
____ (3) Division officer	c. Prepares maintenance instructions and ensures the security of aircraft, tools, equipment, and spaces.
____ (4) Branch officer	d. Supervises the staff division and establishes and coordinates training requirements.
____ (5) Work center supervisor	e. Controls the maintenance department.

2. What division is organized with a relatively small group of highly skilled personnel?
3. What are some of the functions of the quality assurance work center?
4. What work center manages, coordinates, and monitors the maintenance data collection system (MDCS) for the department?

5. What division establishes a report- and record-keeping system for the maintenance department?

6. Match the production divisions listed in column A with their related production functions listed in column B. Place the correct letter from column B in the space provided in column A.

A	B
____ (1) Maintenance and material control division	a. Is responsible for the over-all productive effort and material support of the maintenance department.
____ (2) Aircraft division	b. Supervises, coordinates, and completes scheduled maintenance inspections and unscheduled maintenance.
____ (3) Avionics and armament division	c. Performs organizational maintenance tasks relating to avionic and armament areas on the assigned aircraft.
____ (4) Line division	d. Is responsible for the day-to-day tasks and functions associated with actual flight operations.
____ (5) Target division	e. Is responsible for the operation and maintenance of surface and aerial targets.

7. What are the maintenance forms that are used to control maintenance?

NOTETAKING SHEET 2.2.1N

TOOL CONTROL PROCEDURES

REFERENCES:

1. Naval Aviation Maintenance Program (NAMP), OPNAVINST 4790.2 (latest rev.), Vol. II and Vol. III.
2. Tool Control Program, COMNAVAIRLANTINST 4790.16 (latest rev.).
3. Tool Control Program, COMNAVAIRPACINST 4790.18 (latest rev.).

NOTETAKING OUTLINE

- A. Purpose. The tool control program is designed primarily to reduce the number of aircraft _____ and _____ attributed to foreign objects (tools being left adrift in aircraft after maintenance operations).
- B. Concept. The tool control program is based on the " _____ " concept--that is, provides silhouetted tool containers so that all tools have individual locations to highlight a missing tool.
- C. Advantages
 1. Reduces initial outfitting and tool replacement costs.
 2. Reduces to _____ (_____).
 3. Reduces the man-hours required to inventory tools after each maintenance task.
 4. Ensures that _____ are available for maintenance tasks.
- D. Responsibilities. NAVAIRSYSCOM is the tool control program.
 1. Material control officer
 - a. _____ and _____ a tool control program.
 - b. Monitors and approves all tool requisitions for initial and replacement tools.
 - c. Ensures the tool request is _____.
 - d. Ensures only specific tools are procured. Similiar substitutes or different national stock numbers (NSN's) are not authorized.

2. Quality assurance division

- a. _____ tool control procedures; conducts inventories and checks for quantity and quality of tools.
- b. Coordinates the investigation of missing tools to ensure the tools are not in the aircraft.
- c. Ensures that work centers are in compliance with _____.
- d. Performs frequent random spot checks of in use tool containers to ensure proper marking and inventorying.

3. Work center supervisor

- a. Work center tool containers and their contents may be assigned to the work center supervisor or collateral duty inspector on a _____.
- b. Issuance of tool containers and contents are on a _____ basis at the work center.

4. Mechanic

- a. The mechanic is issued a tool container for each task assignment. The mechanic, with either the _____, collateral duty inspector, or crew leader, must inventory the tool container before starting the task assigned. The number of the tool container is recorded on each _____.
- b. Upon completion of task assignment and before an operational check of the system, the mechanic completes a tool control inventory. Another inventory is performed immediately upon completion of a specific maintenance action, when work stoppage occurs, or at the end of each shift, whichever occurs first. If no tools are missing, either the work center supervisor, collateral duty inspector, or crew leader signs the VIDS/MAF acknowledging the fact that all tools are _____.
- c. Lost tool report (see Figure 2.2-1)
 - (1) When a tool is _____ from a tool container after an inventory, the mechanic notifies the work center supervisor immediately.
 - (2) The work center supervisor notifies _____ that the tool is lost.

- (3) The _____ involved is held in a maintenance status, and the maintenance officer is advised of the situation.
- (4) The maintenance officer then initiates an investigation, coordinated by quality assurance, to ensure the tool is not in the aircraft.
- (5) If the missing tool is not recovered, the mechanic initiates a local _____ within the hour or before securing the working shift, whichever occurs first.
- (6) The report is routed to the maintenance officer, who shall not release the aircraft for flight until personally satisfied that the tool is not in the aircraft.
- (7) The lost tool report is then routed to the _____ for possible use in maintenance trend data on individual work centers and department losses.

E. Tool Control Center

1. Shore based

- a. A tool control center is authorized for shore based activities.
- b. The tool control center is the function of the _____ work center.
- c. The supervisor, under the direction of the material control officer, is responsible for
 - (1) Issuing tool containers in a _____.
 - (2) Maintaining containers to ensure:
 - (a) Satisfactory material condition is retained.
 - (b) Completeness.
 - (c) Serviceableness.
 - (d) Cleanliness.
 - (3) Replacing worn or broken tools.
 - (4) Maintaining an _____ of all required tools.

LOST OR BROKEN TOOL REPORT

AM-116-81

DATE _____ CREW NUMBER _____

TIME _____ FSN PART NUMBER _____

TOOL BOX NUMBER _____

WHO LOST/BROKE TOOL _____
LAST NAME RANK SSN

WHEN LOST/BROKEN _____

WHERE TOOL WAS LOST/BROKEN _____
IF ON A/C GIVE BUNO. AND AREA OF PLANE BEING WORKED ON.

INSTRUCTOR SUPERVISING CREW _____
LAST NAME RANK SSN

STUDENT IN CHARGE OF TOOL ROOM _____
LAST NAME RANK SSN

WAS TOOL MISSING/BROKEN WHEN CHECKED OUT ? YES NO

WAS TOOL BOX INVENTORIED BY T/R CO-ORDINATOR ? YES NO

DID INSTRUCTOR INVENTORY TOOL BOX ? YES NO

COMMENTS _____

I, AS A CREW INSTRUCTOR, AM RESPONSIBLE FOR THE DIRECT SUPERVISION OF CREW AND ANY TOOL LOST OR BROKEN BY THEM.

INSTRUCTORS SIGNATURE _____

TOOL CONTROL PO SIGNATURE _____

FIGURE 2.2-1.--Lost tool report.

2. Shipboard

When operating aboard ship where a tool control center is not practical, the material control officer assigns a tool control program coordinator and each work center assigns a representative to work with the coordinator. They perform the duties of the tool control center.

F. Types of tool containers

1. _____. (See figure 2.2-2)
2. _____. (See figure 2.2-3)
3. _____. (See figure 2.2-4)
4. _____. (See figure 2.2-5)

G. Toolmarkings. Tools are identified by activity, work center, and tool container.

1. Etching is the most desirable method of marking.
2. Each tool in the container will be _____ against a contrasting background.

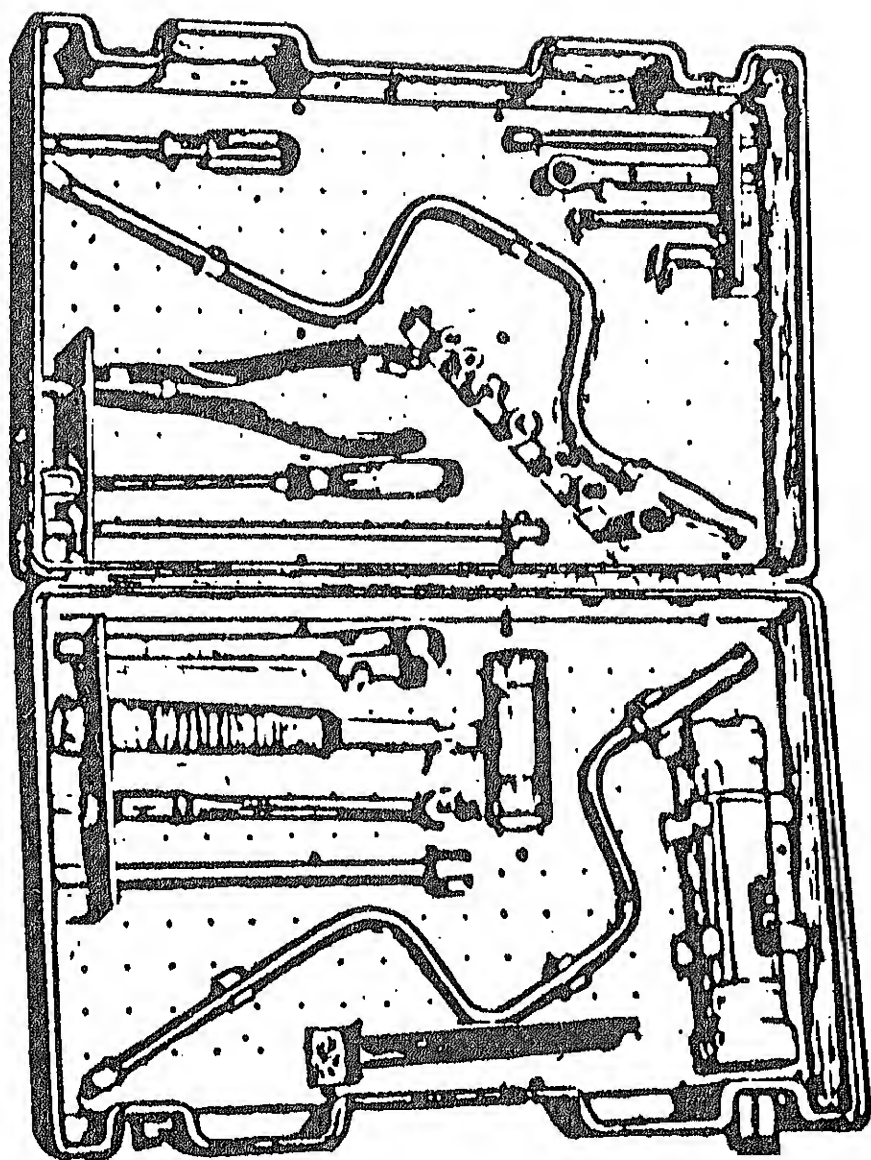


FIGURE 2.2-2.--Hand carried toolbox.

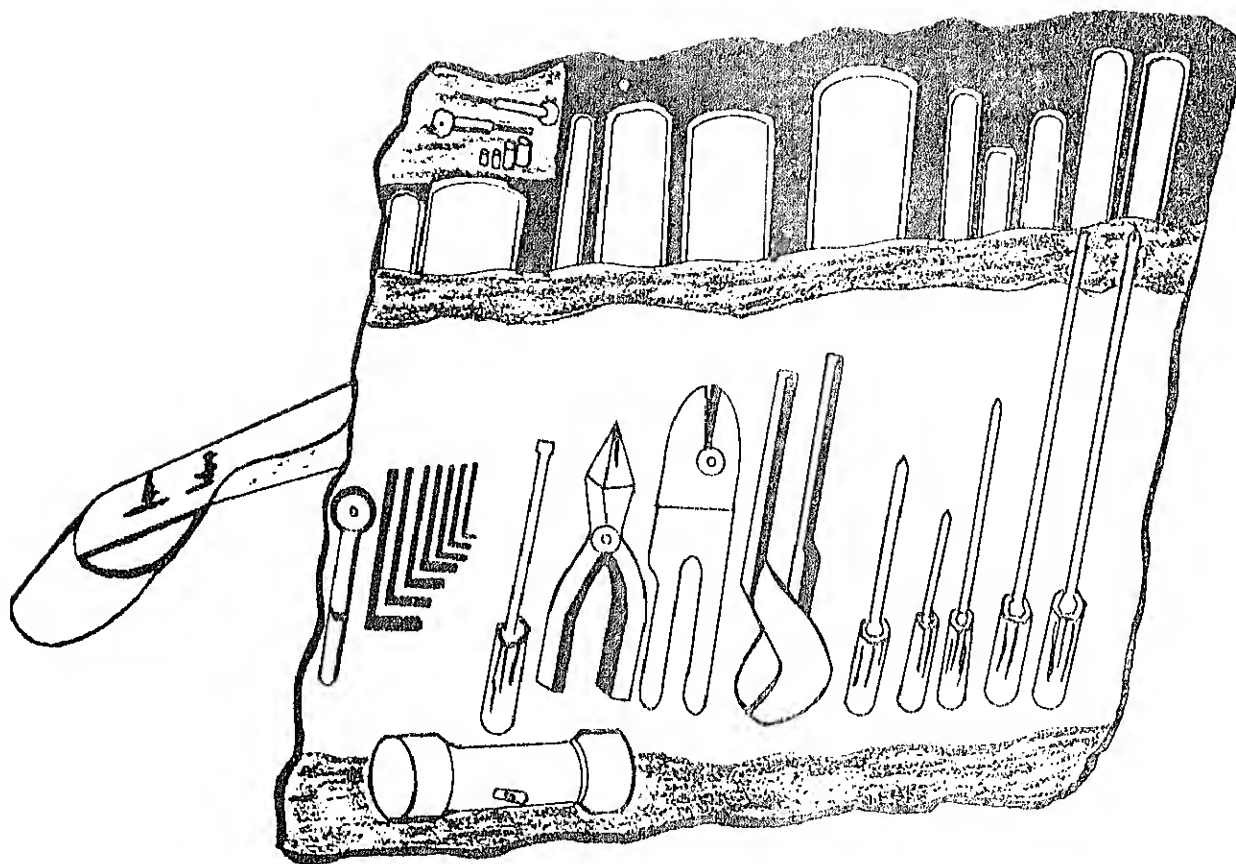


FIGURE 2.2-3.--Tool Pouch.

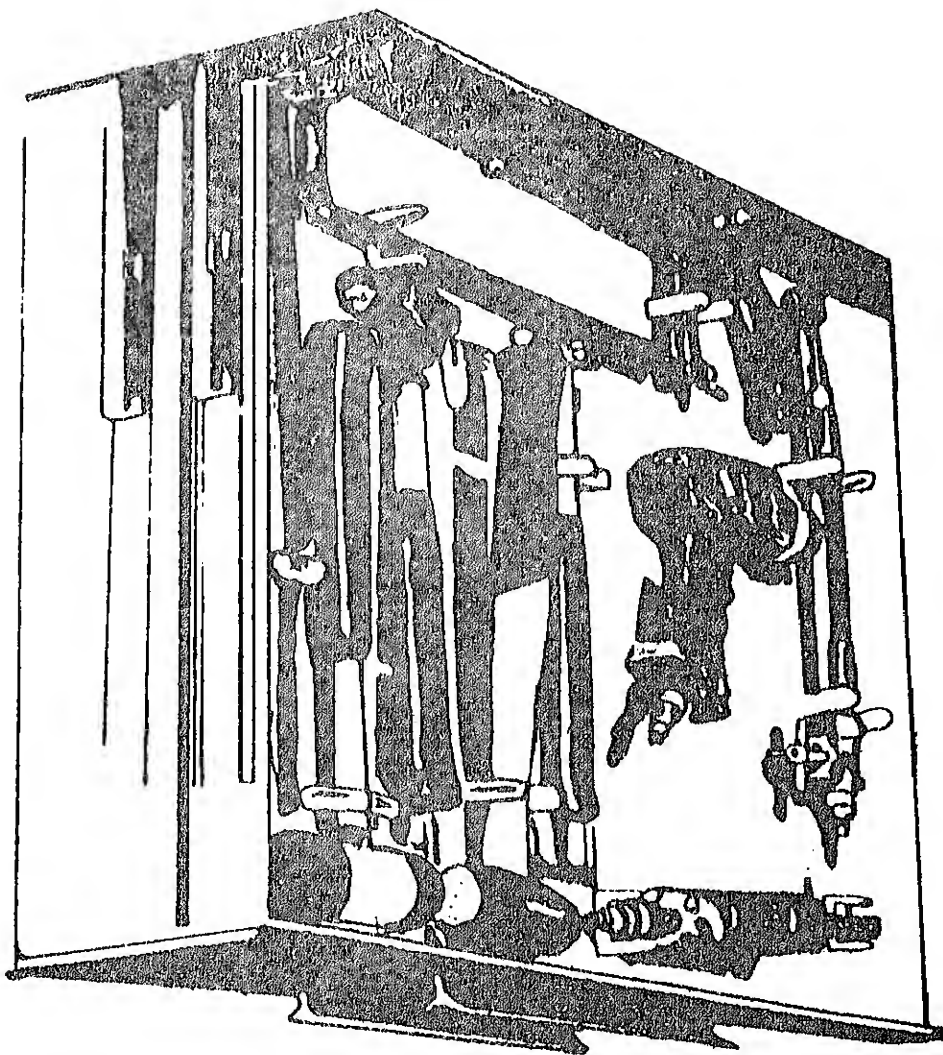


FIGURE 2.2-4.--Rollaway.

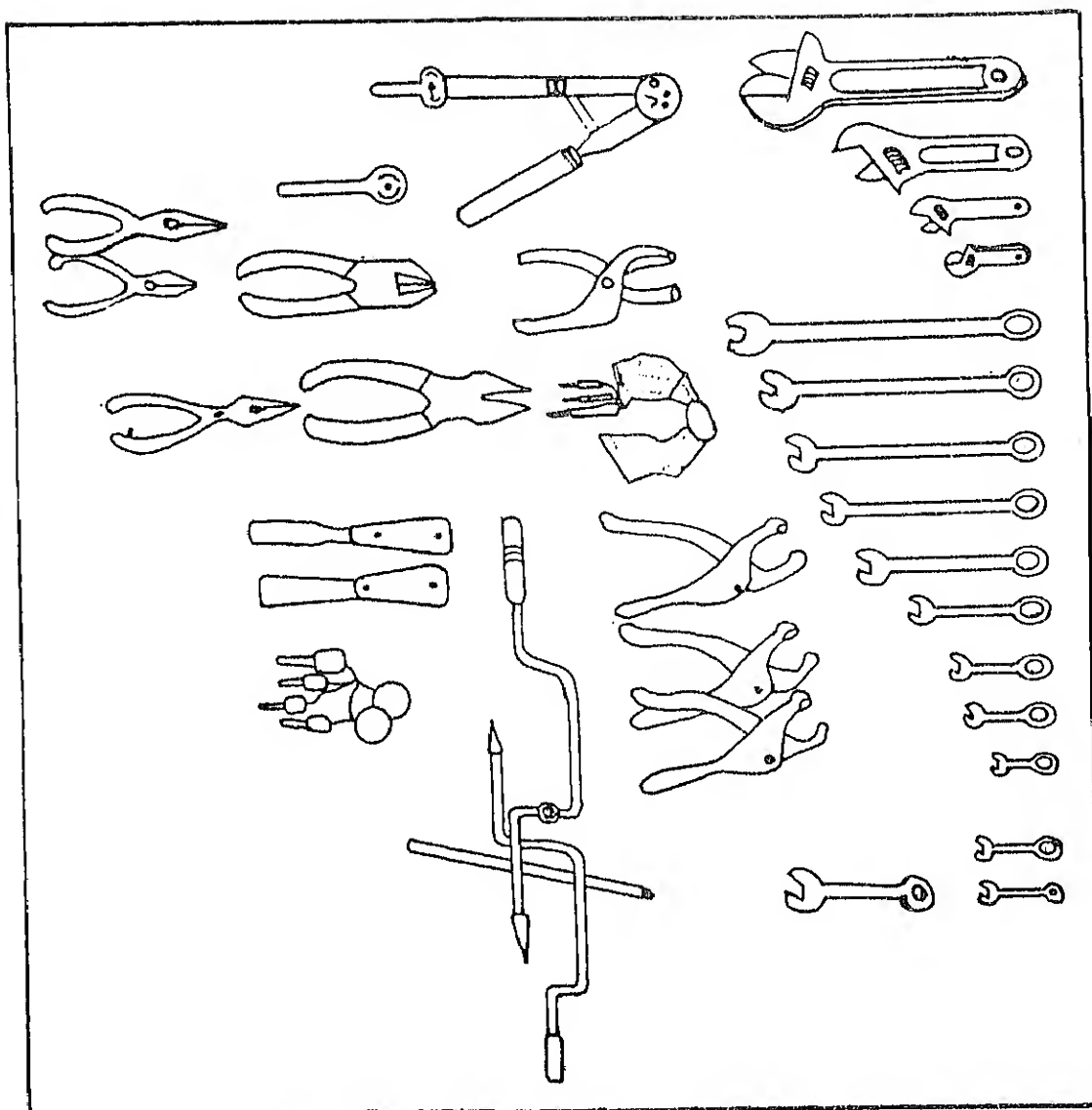


FIGURE 2.2-5.--Wall Mounted Cabinet.

ASSIGNMENT SHEET 2.2.1A

TOOL CONTROL PROCEDURES

INTRODUCTION

The purpose of this lesson is to familiarize you with the importance of tool control in this course and throughout your Navy or Marine Corps career.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.3.

Supported entirely by this lesson topic:

1.3.1 through 1.3.5.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.2.1N.
2. Answer the following questions in the spaces provided.

STUDY QUESTIONS

1. What is the purpose of a tool control program?
2. What is the concept of tool control?

3. What are the four advantages of tool control?
4. What are four types of tool containers?
5. Who reports a missing tool to the work center supervisor?
6. Who initiates a lost tool report?
7. Who coordinates an investigation of a missing tool?
8. Who has the authority to release an aircraft for flight if a tool is missing?
9. Who is responsible for developing and maintaining a tool control program?
10. How are tools identified?

NOTETAKING SHEET 2.3.1N

INTRODUCTION TO PUBLICATION

REFERENCES:

1. Accessory Manual, NAVAIR 03-50GDB-8.
2. Aviation Hydraulics Manual, NAVAIR 01-1A-17
3. Aviation Structural Mechanic E 3 & 2, NAVEDTRA 10309-D
4. Cartridges and Cartridge-Actuated Devices for Aircraft and Associated Equipment, NAVAIR 11-100-1.
5. Cartridges and Cartridge-Actuated Devices for Aircraft and Associated Equipment, NAVAIR 11-100-1.1.
6. Corrosion Control Manual, NAVAIR 01-1A-509.
7. General Manual for Structural Repair, NAVAIR 01-1A-1.
8. Illustrated Parts Breakdown, NAVAIR 01-40AVC-4-1.
9. Maintenance Instructions Manual, NAVAIR 01-40AVC-2-1.
10. Naval Air Technical Manual Program (NAMP), Vol. II, OPNAVINST 4790.2 (latest rev.).
11. Naval Air Technical Manual Program, NAVAIR 00-25-100.
12. Rocket Catapults and Rocket Motors for Aircrew Escape System, NAVAIR 11-85-1.
13. Work Unit Manual, NAVAIR 01-40AV-8.
14. Safety Precautions for Shore Activities, NAVMAT P-5100.

NOTETAKING OUTLINE:

A. Purpose

1. The primary purpose of publications is to _____ mechanics and technicians.
2. These publications are designed for mechanics and technicians and _____ information and directions to them in their own technical language.
3. They are prepared by the manufacturer of the specific model aircraft, engine, or equipment, and by the Naval Air Systems Command (NAVAIRSYSCOM) or its field activities in accordance with specifications issued by NAVAIRSYSCOM.

4. They set forth current, authoratative information concerned with material upkeep, check, test, troubleshoot, repair, and operation in a manner to provide optimum product performance.

B. Publication Lists and Indexes

1. Navy Stock List of Publications and Forms, NAVSUP Publication 2002.

- a. NAVSUP 2002 contains a list of all publications and forms in the _____ inventory.
- b. This list includes all technical publications and forms issued by the major bureaus, offices, and systems command.
- c. NAVSUP 2002 is issued in a _____ publication as follows:
 - (1) Section I is an alphabetical/numerical listing of form numbers, publication numbers, ship hull numbers, and electronic model numbers.
 - (2) Section II is an alphabetic listing of publications and forms by title/nomenclature.
 - (3) Section III is a numerical listing of publications and forms by National Stock Number (NSN) followed by a listing of NAVAIRSYSCOM technical directives.
- d. Publications and forms are sequenced together. This microfiche edition is issued quarterly in February, May, August, and November. Each edition reflects all current and available publications and forms, both of which are controlled by the Publications and forms center.
- e. The fiche cards that make up the NAVSUP 2002 are accompanied with a printed paper-type introduction, which is distributed separately and treated as a separate publication. This introduction contains the following information.
 - (1) _____ forms and publications.
 - (2) Listings of prefixes and codes used to identify the various types of publications.
 - (3) _____.

(4) Identification aids and detailed instructions for requisitioning commercial books and publications sponsored by other service branches and other U. S. Government departments, bureaus, etc.

(5) Other detailed information pertaining to the requisitioning of printed materials.

2. Naval Aeronautic Publications Index (NAPI)

a. The NAPI is used in relating manuals and technical directives to _____.

b. The NAPI is divided into eight parts. The portions which we are concerned with are discussed as follows:

(1) Equipment Applicability List, NAVAIR 00-500A.

(a) The Equipment Applicability List is a cross reference index listing of Naval Air Systems Command publications for aircraft components, and related equipment according to model, type, or part number.

(b) The Equipment Applicability List should be used when attempting to determine what publications are available on a particular item of equipment, and the model, manufacturer's or Navy part number of the item is known.

(2) Aircraft Application List, NAVAIR 00-500B

(a) The Aircraft Application List contains a two-part listing of all manuals and available MIARS microfilm cartridges grouped according to their application to an aircraft.

(b) The aircraft are arranged by model number and are grouped in series according to their _____.

(c) Part I contains applicable technical manuals that are listed by publications code number under each model of aircraft.

NOTE: If MIARS cartridges are available, the cartridge number is listed in the appropriate column.

(d) Part II contains a list of aircraft by _____.

(e) The Aircraft Application List is especially useful for determining what manuals/MIARS cartridges are available for a particular model aircraft.

(3) Directives Application List, NAVAIR 00-500C

(a) The Directives Application List is a listing of the active Naval Air Systems Command letter type technical directives (Bulletins and Changes) with respect to their applicability to an aircraft.

(b) It serves the same purpose for letter type technical directives as the Aircraft Application List does for technical manuals.

(c) The applicable directives are listed by number, under each configuration of aircraft model.

NOTE: Configuration refers to modifications made to a basic aircraft model.

(d) Information pertaining to each entry in this list includes the type, code, number, subject, priority, approved dates and issue date of each directive.

(4) Microfilm Cartridge Cross-Reference, NAVAIR 00-500M

(a) Volume I

1. Part I, a listing of Naval Air Systems Command technical manuals to _____ with the current dates.
2. Part II, a listing of Maintenance Information Automated Retrieval System (MIARS) cartridge numbers and their latest film dates.

NOTE: If a film date is not listed, the corresponding cartridge is not available for issue.

(b) Volume II

1. Contains a listing of MIARS cartridges with their applicable technical manuals by aircraft model.
2. Only those technical manuals applicable to the aircraft are listed.

C. Major Classes of Aeronautic Publications

1. Letter Type

a. Technical Directives

(1) Numbering

- (a) Changes and Bulletins are numbered _____
in accordance with their subject title.

- (b) The numbers assigned to changes and bulletins are provided by the Technical Directives Control Center.

- (c) Changes and bulletins are automatically distributed to all concerned activities.

- (d) Technical directives are assigned a _____ in accordance with the importance and urgency of accomplishing the work involved. Categories are as follows:

1. _____
2. _____
3. _____
4. _____

(2) Types

(a) Formal technical directive

1. Issued as a change, or as an Amendment or Revision, and is disseminated by letter.

2. Formal technical directives are used to direct the accomplishment and recording of modifications to _____

(b) Interim technical directive

1. Issued as a Change, or as an Amendment or Revision, and, in order to ensure prompt delivery to the concerned activities, is disseminated by message.
2. The Interim technical directive is reserved for those instances to correct a safety or operational condition whenever it is considered too important to risk the time involved for the issuance of a formal directive.
3. Interim changes are superseded by a _____ directive which will have the same number as the Interim directive.

(c) Change

1. A change is a document containing instructions and information which directs the accomplishment and recording of equipment.
 - a. _____
 - b. _____
 - c. _____
 - d. _____
2. A change is issued to direct that parts be added, removed, or changed from the existing configuration, or that parts or material be altered, relocated, or repositioned.
3. A change may be issued in parts to accomplish specific stages of a total directed action, or to accomplish action on different configurations of affected equipment.

(d) Bulletins

1. A bulletin is a message-type directive, comprised of instructions and information, which directs a one time inspection to determine whether a given condition exists, and specifies _____ is taken if the condition is found.
2. It may contain instructions for corrective action using approved repair procedures, provided no change in material or configuration is involved.

b. Instructions

(1) Numbering

- (a) Instructions are numbered by each _____ in consecutive order according to the subject covered.
- (b) Those Instructions pertaining to naval aviation may be addressed to "All Ships, Stations, and Units concerned with Navy Aircraft", or to certain activities only.

(2) Types

- (a) Instructions are directives containing information and instructions on policy, administration, and operations.
- (b) Instructions are directives of a _____ nature and are effective until canceled or superseded by a later directive.

c. Notices

(1) Numbering

- (a) Notices are not assigned consecutive numbers because of their _____ nature or _____.
- (b) For this reason, the date must always be used when referring to a Notice.

(2) Types

- (a) Notices are directives of a one-time nature or directives which are applicable for a brief period of time. (Also contains information on policy, operations, and administration.)
- (b) Each Notice contains a provision for its own cancellation.

2. Manuals

a. Numbering of Manuals

- (1) All manual type publications are listed in the NAVSUP Publication 2002 and the NAPI with the prefix NA (Naval Air Systems Command).
- (2) Code numbers assigned to manuals consist of a prefix (NA) and a series of three to five parts.

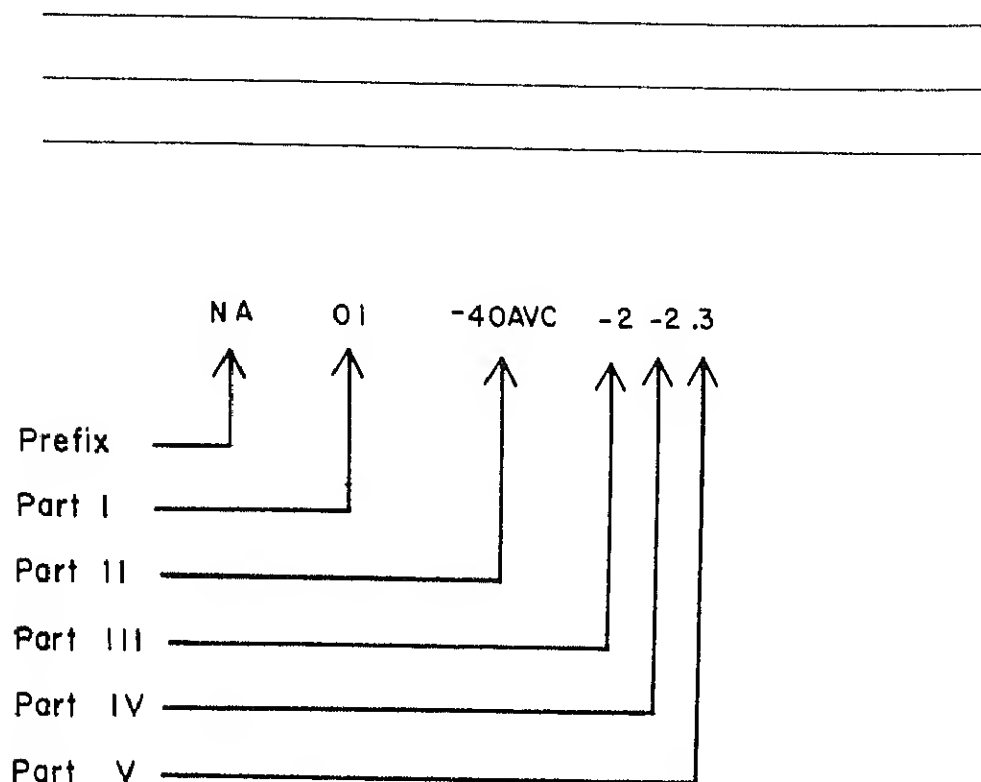


FIGURE 2-2.1.--Manual Numbering System.

(a) Part I

1. Consists of numbers to identify the general subject classification with the basic subject to which they pertain.
2. Usually consists of two digits; however, when an additional classification breakdown is necessary, a letter is added to the two digits. (See Figure 2.3.2).

(b) Part II

1. Consists of number (or numbers and letters) which indicate the specific class, group, or model and manufacturer of the aircraft or equipment.

2. Part II of the numbering system will differ for each subject classification.

(c) Part III

1. Consists of a number which designates a specific manual.
2. For aircraft manuals (01 series), this part designates a specific type of manual.

(d) Parts IV and V

1. In most instances are used in aircraft 02 series manuals.
2. Part IV is usually a volume number for the type of manual designated by Part III.

General	00
Allowance lists	00-35Q
Training publications (aviation).	00-80
Aircraft.	01
Powerplants	02
Accessories	03
Hardware and rubber	04
Instruments	05
Fuels, lubricants, and gases.	06
Dopes and paints.	07
Airfield lighting Series.	08-20
Photography	10
Armament (aviation)	11
Fuel and oil handling equipment	12
Parachute and personal equipment.	13
Hanger and flying field equipment	14
Standard preservation and packaging instructions.	15
Electronics	08 & 16
Machinery, tools and test equipment.	17 & 18
Ground servicing and automatic equipment.	19
Chemical equipment.	24 & 39
Instructional equipment and training aids	09 & 28
Meteorology (aerology).	50
Ships installations	51

Figure 2-3.2 - Subject Categories and Code Numbers for
Aeronautic Manuals.

3. Part V is a subvolume number of the subject designated in Part IV.

4. Parts IV and V are usually separated by a decimal point; however, a dash can be used.

b. Types

(1) General Manuals (00 series)

- (a) General manuals contain repair information of a _____ for all aircraft.
- (b) Also included in these manuals are the 00-35Q series, Allowance Lists and Outfitting Lists. These manuals contain listings of the equipment and materials necessary to place and maintain various activities in a material readiness condition.

(2) Aircraft Manuals (01 series)

- (a) Aircraft manuals are published for each aircraft model in naval use.
- (b) The manuals for a particular aircraft model consist of a series of individual publications, each dealing with a definite phase of the overall operation or maintenance program.

1. General Aircraft Manuals, NAVAIR 01-1 (series)

- a. _____
-
- b. These manuals represent some aspect of construction, operation, maintenance, repair, or inspection applicable to many models of aircraft.

c. Examples of General Aircraft Manuals are:

1) Corrosion Manual, NA 01-1A-509.

- a) Establishes requirements for Intermediate and Organizational levels of maintenance afloat and ashore.
- b) Included are general instructions, procedures, and information for cleaning and corrosion control of naval aircraft and associated equipment.

NOTE: If a conflict occurs between this manual and the specific corrosion control manual of an aircraft model, the instructions contained in this manual about aircraft cleaning, corrosion removal, materials, methods, and subsequent finishes shall take precedence.

2) Aviation Hydraulic Manual, NAVAIR 01-1A-17

- a) Provides general requirements for maintenance of hydraulic systems and related ground support equipment.
- b) This manual is required reading for all military and civilian personnel at all levels of maintenance performing any hydraulic maintenance function on naval aircraft systems, airborne hydraulic equipment, and related ground support equipment (GSE).

2. Technical Manual List

- a. Provides information concerning the availability and applicability of technical manuals for the maintenance of the particular aircraft model.

- b. Arranged in four sections
 - 1) Section I - Introduction, gives general information and defines the purpose, arrangement and use of the manual.
 - 2) Section II - Lists all known publications applicable to the aircraft model.
 - 3) Section III - Provides a list of all systems, subsystems, and components applicable to the specific aircraft model.
 - 4) Section IV - Lists support equipment, by part number, applicable to the specific aircraft model.
- 3. NATOPS Flight Manual (Naval Air Training and Operating Procedures Standardization)
 - a. Flight manual contains complete _____ for the aircraft and its operational equipment.
 - b. Emergency operation instructions as well as _____ are provided.
 - c. This manual is of primary interest to the pilots and aircrew of an aircraft.
- 4. Maintenance Instruction Manual (MIM)
 - a. Contains all the essential information required by aircraft maintenance personnel for service and maintenance of the complete aircraft.
 - b. It includes the data necessary for _____ and maintaining the power plant, accessories, and all other systems and components of the aircraft.
 - c. Before attempting any task on an aircraft, the MIM for that particular model aircraft will be consulted.
 - d. Proper use of this manual may _____ possible damage to aircraft/components and save much time.

- e. Recommended maintenance methods provide procedures which can be accomplished by the appropriate level maintenance which will be discussed in greater detail later in this unit.

5. Illustrated Parts Breakdown (IPB)

- a. The Illustrated Parts Breakdown (IPB) normally consists of several individual volumes:
 - 1) One for each functional element of the aircraft.
 - 2) One volume which is the introduction, numerical and reference designation index.
 - b. The parts indexes are indicated by a -4 in Part III of the publication number, with each volume identified by a dash and number in Part IV.
-
-
-

- c. The IPB is useful in the procurement, requisitioning, storing, issuing, and identification of parts.
- d. It can also be used to determine the _____ or item required for replacement in a repair situation.

6. Work Unit Code Manual

- a. Work Unit Code (WUC) Manuals are provided for each model aircraft.
- b. These manuals are identified by a -8 as Part III of the publication number.
- c. WUC manuals are used so that workers may easily convert _____ of the maintenance actions they perform into coded information on the source documents.

d. There are eight codes that maintenance personnel shall use in completing source documents:

- 1) Malfunction description code: Describes equipment malfunction.
- 2) When discovered code: Indicates when the need for maintenance action was discovered.
- 3) Action taken code: Indicates what maintenance action was taken on the item identified by the work unit code.
- 4) Support action code: Identifies the man-hours expended in specific categories of support work.

NOTE: Support action code is used with the Support Action Form (SAF).

- 5) Type maintenance code: Describes the type of maintenance to be accomplished.
- 6) Transaction codes: A two-character numeric code used to denote the type of data being reported.
- 7) Type equipment Code: Identifies the complex end item or category of equipment being worked on.
- 8) Work unit code: Identifies the system, subsystem, component, etc., on which maintenance is being performed.

7. Maintenance Requirement Cards (MRC)

- a. MRC's are 5 x 8 cards that provide detailed step-by-step instructions required for the efficient performance of certain maintenance tasks.
- b. Each MRC contains the tasks relating to a particular system, subsystem, area, or component and provides a for the accomplishment of these tasks.

c. Each MRC deck may contain the following information:

- 1) Recommended rating/Military Occupational Specialty (MOS).
- 2) Performance interval.
- 3) Work/zone area involved.
- 4) Ground support equipment required.
- 5) _____.
- 6) Replacement parts.
- 7) Assistance requirements for task performance.
- 8) _____.
- 9) Clearances and tolerances.
- 10) Charts.
- 11) Part numbers.
- 12) Any other pertinent information where necessary.

d. The MRC's do not include instructions for repair and adjustment/calibration, or means of correcting defective conditions. The applicable technical manuals should be consulted for these instructions.

3. Powerplant Manuals (02 series)

a. Powerplant manuals are designed primarily for personnel of the AD rating; however, other maintenance personnel may be required to use these manuals.

b. Powerplant manuals consist of: (New System)

(1) Intermediate Maintenance Manuals.

(2) _____.

(3) Illustrated Parts Breakdown.

c. Old system powerplant manuals consist of:

(1) Maintenance/Service Instructions Manual.

- (2) Overhaul Instructions Manual.
- (3) Illustrated Parts Breakdown.
- d. New and old system manuals are still in effect today due to the wide variety of new and old aircraft still used in the fleet.
- e. _____

- 4. Accessories Manual (03 series)
 - a. The 03 series manuals cover all types of aircraft accessories.

NOTE: An accessory is an item of equipment which is required for operation of the aircraft and which cannot be considered an integral part of the airframe or engine.
 - b. Accessories manuals are used to _____
information in aircraft Maintenance Instructions Manual.
 - c. Accessories manuals are usually maintained in the organization Technical Publications Library.
- 5. Aviation Armanent Manuals (11 series)
 - a. 11 series manuals are used as a basis for the formulation of all maintenance instructions, covering identification, handling, logbook entries and service lines for cartridges, cartridge-actuated devices, rocket catapults, and rocket motors used in naval aircraft.
 - b. There are three volumes pertaining to the AME.
 - (1) Aircrew Escape Propulsion System Devices, NAVAIR 11-85-1
 - (2) Cartridges and Cartridge Actuated Devices for Aircraft and Associated Equipment, NAVAIR 11-100-1.
 - (3) General Use Cartridges and Cartridge Actuated Devices for Aircraft and Associated Equipment, NAVAIR 11-100-1.1.
- 6. Aviation Crew Systems, Oxygen Equipment (13 series). Contain information and instructions about configurations, functions, applications, operations, storage, and maintenance of oxygen equipment.

7. Safety Precautions Manual (NAVMAT P-5100 series). Contain safety precautions applicable to all Navy personnel, military and civilian, to all naval commands and activities, and to the Marine Corps to an extent determined by the Commandant of the Marine Corps.

D. Updating Publications

1. Manuals

- a. In an effort to provide maintenance activities with the latest and most accurate information possible, NAVAIRSYSCOM has instituted a program of continuous review and frequent revision of technical publications.
- b. Activities receive this updated information in the form of changes and revisions which are automatically distributed.

(1) Changes

(a) Changes are issued when only _____.

(b) The changed pages replace the corresponding affected pages of your technical publication.

(c) When incorporating a change, you remove the old page, discard it, and install the changed page(s).

(d) Changes may, at times, include "pen and ink" instructions in which only a few words of a manual page require correction, and the printing of a completely new page is not warranted.

(e) Changes come in the form of:

1. Formal Changes - A formal change is defined as an alteration in a portion of a manual, which is not large enough to justify the issuance of a revision.

2. Rapid Action Changes - Used to distribute urgent and essential data when it constitutes a direct hazardous effect to personnel, impairment to safety of flight, or similar mission, or maintenance capabilities.

(2) Revisions

- (a) Revision is a complete new edition of an existing manual.
- (b) It replaces the original or preceeding issue and includes any existing changes.
- (c) Revisions are prepared in the same manner as basic manuals.

2. Letter Type

- a. Technical Directives - Sometimes it is found that a Change or Bulletin is not the complete answer to a problem, and it is necessary to amend or revise an outstanding directive.

(1) Amendment

- (a) An Amendment is a document comprised of information which clarifies, corrects, adds to, deletes from, makes minor changes in requirements to, or cancels an existing technical directive.
- (b) It is only a supplement to the existing directive and not a complete directive in itself.
- (c) A maximum of _____ Amendments may be applied to the TD, each in effect until rescinded or superseded by a revision.

NOTE: Amendments cannot be used to cancel another Amendment.

(2) Revision

- (a) A completely new edition of an existing directive.
- (b) It supersedes the original and all existing Amendments.

- (3) Rescission - Is the process by which TD's are removed from the active files after all requirements have been incorporated.

(4) Cancellation

- (a) Cancellation of a technical directive is the process whereby the TD is removed from the active files when it is determined that the previously issued TD is not to be incorporated.

(b) Cancellation is directed by the issuance of an _____ to the TD.

E. Security of Classified Publications

1. The AME, from time to time, has occasion to use classified publications relating to the performance of their work.
2. Before accepting such publications, a person must be cleared to the appropriate degree to handle this classified material.
3. The Department of the Navy Information Security Program Regulations, issued by The Chief of Naval Operations is the basic directive relating to safeguarding classified information.
 - a. This manual applies to all military and civilian personnel and all activities.
 - b. It contains detailed instructions for classifying, marking, and handling classified information, and for access to an authorized disclosure of the information.
4. Publications listed in NAVSUP Publication 2002 are unclassified unless otherwise marked in the column headed "PS" (Physical Security).

F. Maintenance Information Automated Retrieval System (MIARS)

1. Purpose

- a. MIARS are designed to improve the dissemination and the availability of current maintenance information.
- b. Replaces volumes of printed information on a series of continually updated microfilm cartridges.
- c. The advantages that the MIARS has over printed publications are:
 - (1) Reduction in cost of _____ maintenance information.
 - (2) Reduction of storage requirements for maintenance information.
 - (3) _____
_____.

2. Numbering

- a. Cartridges are numbered according to a system consisting of alphanumeric characters that represent aircraft type/design, engine type, level of maintenance, and work unit code identification.
- b. The level of maintenance is identified by the numbers right of the decimal point:
 - (1) _____ Organizational cartridges.
 - (2) _____ Intermediate.
 - (3) _____ Depot.

NOTE: Confidential cartridges are identified with a (c), enclosed in parenthesis, in the right hand position.

- 3. Updating - As mentioned previously in the lesson the NAVAIR 00-500M contains a listing of available publications in microfilm format. Proper use of Parts I and II will ensure that you are always using the most recent MIARS cartridges.

4. Equipment

- a. MIARS devices are specially designed to provide a means of viewing maintenance information contained on 16 mm microfilm.
- b. MIARS equipment projects an 8 1/2 by 11 inch image onto a viewing screen with certain models capable of producing pages on selected maintenance information.

(1) Microfilm Cartridge

- (a) The cartridge contains maintenance information on a 16-mm film.
- (b) _____
_____.
- (c) The manual and frame numbers for each volume are printed on the case of each microfilm cartridge and are available in the cartridge index.

(2) Automatic Reader Printer

- (a) This machine is designed for use in shops, technical libraries, and supply and administrative spaces, ashore and afloat.

(b) It is capable of printing images of selected maintenance information.

(3) Portable Reader

(a) This machine is designed primarily for use where portability is required and where printed copies of maintenance information are not essential.

(b) The unit is powered by _____.

ASSIGNMENT SHEET 2.3.1A

INTRODUCTION TO PUBLICATIONS

INTRODUCTION

In the field of aviation structural mechanics, many problems arise concerning the repair or replacement of items on modern aircraft. Many of these problems would never be solved unless there were guides to follow. These guides are publications which set forth procedures and methods proved by aircraft engineers for repairing or replacing these items. These publications are printed in several different forms and are of the utmost importance to the aviation structural mechanic.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2 and 1.3.

Supported entirely by this lesson topic:

1.2.1 through 1.2.11.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.3.1N.
2. Read pages 1-1 through 1-35, of chapter 1, in the Aviation Structural Mechanic E 3 & 2, NAVEDTRA 10309-D.
3. Use Notetaking Sheet 2.3.1N and the reading assignment to answer the following questions.

STUDY QUESTIONS

1. What is the purpose of publications?

2. What are the types of Publications?
3. What are the types of Letter publications?
4. What letter publications are about policy?
5. Which letter publication outlines procedures for equipment modifications?
6. Which letter publication outlines procedures for inspections?
7. What manual publication lists troubleshooting procedures?
8. What manual publication contains structural repair information of a general nature for all aircraft?
9. What is used by supply and maintenance personnel to identify and order replacement parts?

10. Is an accessory considered a part of the integral airframe?
11. What manuals provide information about cartridge and rocket catapults?
12. What manual provides the general requirements for maintenance of hydraulic systems and related equipment?
13. When there is a conflict about corrosion control between the manual of the aircraft and the Corrosion Control Manual, which manual takes precedence?
14. What manual is used to convert narrative description of maintenance actions into coded information on the source documents?
15. What manual contains information and instructions about oxygen equipment?
16. What does the MIARS replace?
17. The MIARS has what advantages over printed publications?

18. What type of maintenance are MRC's used for?

19. Why are publications numbered?

20. Classified publications are safeguarded following what manual?

21. What are the types of equipment used in the MIARS?

NOTETAKING SHEET 2.4.1N

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

REFERENCES:

1. Maintenance Instructions Manual, Navy Models A-4E Aircraft General Information and Servicing, NAVAIR 01-40AVC-2-1.
2. Maintenance Instructions Manual, Navy Models A-4E and A-4F Aircraft Personnel Environmental Systems, NAVAIR 01-40AVC-2-2.3.
3. Maintenance Instructions Manual, Navy Models A-4E and A-4F Aircraft Canopy and Survival Systems, NAVAIR 01-40AVC-2-2.4.
4. Aviation Structural Mechanic E, 3&2, NAVEDTRA 10309-D, Chapter 1, Aeronautical Publications.

NOTETAKING OUTLINE:

A. General Information and Servicing MIM.

1. The General Information and Servicing volume is designed primarily for the plane captain; however, this volume also contains a great deal of information important to all AM personnel.
2. This volume contains a general description of the aircraft, all necessary information which is not contained in other specialized manuals, and all information pertaining to _____ the aircraft.

NOTE: There are no maintenance procedures outlined in the General Information and Servicing MIM, only servicing procedures.

3. The General Information and Servicing MIM is organized in the following manner.

a. Table of Contents.

- (1) The table of contents is in the beginning of the manual.
- (2) Table of contents presents in sequence the principle _____ within each section.
- (3) Also a complete list of the tables in numerical sequence located throughout this manual.

(4) Third part of the table of contents is a list of all _____ found throughout the manual in numerical sequence.

b. Section I, Introduction. Contains the scope, arrangement, reference data, _____ and revisions, aircraft changes and bulletins, and tube bend data.

c. Section II, General Description. This section contains general information on aircraft systems and specific information on safety and servicing.

d. Alphabetical Index.

(1) The alphabetical index is located at the end of each manual.

(2) The alphabetical index is the _____ for locating information in the manual.

(3) Subjects are listed alphabetically and by _____.

B. Systems Maintenance Instructions Manual

1. Systems manuals are primarily designed to provide using activities with details of procedures necessary for organizational and intermediate levels of maintenance.

2. Systems manuals will be organized as follows:

a. Table of Contents.

(1) Located in the beginning of the volume.

(2) Lists the principle text headings within each section.

(3) Gives a complete list of tables arranged in numerical sequence.

(4) Lists completely all illustrations located throughout the manual in numerical sequence.

b. Sections

(1) Section I, Introduction.

NOTE: Section I is the same in all volumes of a Maintenance Instructions Manual.

- (a) This section will contain a brief explanation and give the purpose of the manual including any relevant information that will assist in using the manual.
- (b) Also will list any aircraft or manual changes in effect.

(2) Section II Description and Operation

- (a) Section II is primarily divided into major systems and subsystems.
- (b) Each primary division is subdivided into:

- 1. _____.
- 2. _____.
- 3. _____.
- 4. _____.

(3) Section III, Organizational (Class D, E, and F maintenance).

- (a) Section III provides such maintenance coverage as removal and installation procedures and troubleshooting charts for organizational level of maintenance.
- (b) A typical page of section III consists of the following information: (See figure 2.4.1)
 - 1. Each component maintenance procedure is identified by a boldface heading for ease in locating the material on the page.
 - 2. All removal and installation procedures provide a recommended manpower requirement for the work center supervisor's use in assigning

A
3-256. A-4F RAIN REPELLENT CONTROL VALVE
MAINTENANCE.

3-257. Maintenance of the rain repellent control valve (figure 3-84) is limited to removal and installation. If replacement is necessary, the removed valve shall be packaged and sent to Supply for disposition.

3-258. REMOVAL. Location of the rain repellent control valve is above the left rudder pedal.

B
Manpower Requirements

One man is required to remove the rain repellent control valve.

Removal Procedure

WARNING

Make certain that aircraft ground handling safety equipment, referred to in NAVAIR 01-40AVC-2-1, is installed and that no electrical power is connected to aircraft before starting work on aircraft. Failure to comply may result in injury to personnel.

NOTE

Rain repellent fluid container shall be removed before disconnecting line leading to rain repellent control.

- a. Remove rain repellent fluid container. (Refer to paragraph 3-253.)
- b. Remove two flexible hose B-nut connections at tee on upper side of valve. Catch residual fluid with waste cloth.
- c. Cap hose and tee ends with plastic caps.
- d. Remove flexible hose B-nut at bottom of valve. Catch residual fluid with waste cloth.
- e. Cap hose and union ends with plastic caps. Unscrew electrical connection.
- f. Remove two bolts and two washers securing valve to bracket.
- g. Remove valve with attached tee and union from aircraft.
- h. Remove tee, packing, ring, and nut from upper side of valve. Remove union and packing from lower side of valve.

Changed 15 January 1970

3-259. INSTALLATION. Access to the rain repellent control valve is inside the cockpit above the left rudder pedal.

C
Tools and Equipment

Torque wrench	0 to 150 inch-pounds
Ac mobile electric powerplant	Type NC-5, or equivalent

Materials

Packing (2)	MS28778-4
-------------	-----------

Manpower Requirements

One man is required to install the rain repellent control valve.

D
Quality Assurance Requirements

Inspection is required when a step is underlined.

Installation Procedure

WARNING

Make certain that aircraft ground handling safety equipment, referred to in NAVAIR 01-40AVC-2-2.3, is installed and that no electrical power is connected to aircraft before starting work in cockpit area and on aircraft. Failure to comply may result in injury to personnel.

- a. Ensure that rain repellent fluid container is removed from aircraft.
- b. Install new tee fitting packing (MS28778-4), ring, and nut on upper side of valve.
- c. Install new packing (MS28778-4), nut, and union on lower side of valve.
- d. Install valve with two bolts and washers.
- e. Remove protective caps from upper flexible hoses and attach hose to tee fitting on upper side of valve. Torque B-nuts to 115±10 inch-pounds.
- f. Remove protective caps from lower hose and attach hose to union on lower side of valve. Torque B-nut to 115±10 inch-pounds.
- g. Attach electrical connector to valve.
- h. Install rain repellent fluid container. (Refer to paragraph 3-254.)

3-131

FIGURE 2.4-1 Typical Page of a Maintenance Instruction Manual

3. All tools and equipment other than standard tools are indicated ahead of the maintenance procedure, so that these items may be drawn from the tool room prior to starting the operation.
4. When consumable materials such as lubricants, lockwire, and cotter pins are required during an installation procedure, a listing of these items is made ahead of the procedural steps. Miscellaneous small parts (other than standard AN and MS hardware), which are necessary for removal and installation also appear in the materials list.
5. As an aid to Quality Assurance representatives, those steps in a procedure which require an inspection are _____.

NOTE: In some MIM's the steps in a procedure which require a Quality Assurance inspection are set in italics.

6. The Quality assurance requirements are summarized at the end of the installation procedures.

(4) Section IV, Intermediate (Class C) Maintenance.

- (a) This section provides instructions for maintenance and repair on equipment and components including what types of maintenance can be performed on the equipment or components concerned.
- (b) Also included in section IV is _____ repair and bending data.

(5) Alphabetical Index

- (a) Located in the end of the manual.
- (b) Lists information in an alphabetical order by subject matter.

NOTE: In some systems MIM's the alphabetical index lists subject matter by page number; in other systems MIM's subject matter is listed by paragraph, figure, or table numbers.

C. MIARS Microfilm

1. Each microfilm cartridge contains a cartridge index frame listing all NAVAIR numbers of manuals contained in the cartridge, the titles of the manuals, and locations of the manuals within the cartridge by frame number.
2. The table of contents in a MIARS microfilm is arranged differently than a manual publication.
 - a. The principle text headings are listed first with the illustrations listed next and the list of tables last.
 - b. To find information by frame number you must take the frame number of the first page of the table of contents and add that to the search number given for the selected information and turn to the frame.

D. Portable Reader

1. The portable reader is a machine designed to provide a means of viewing maintenance information contained on the 16 mm microfilm.
2. The reader projects an 8 1/2 inch image of selected maintenance information onto a viewing screen.
3. Operation of the portable reader is as follows:
 - a. Install the microfilm cartridge into the cartridge holder, located on the MIARS reader.

NOTE: Manual numbers up.
 - b. Thread the film through the rollers and film gate, and insert the end of the film into the film slot of the film winder.
 - c. _____

 - d. To locate _____ rotate the film winder clockwise or counterclockwise.
 - (1) Frame numbers are located in the lower left-hand corner of each film frame.
 - (2) Page numbers are located in the lower right-corner of each film frame.

JOB SHEET 2.4.1J

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

INTRODUCTION

TIME: 1 Hour

The information on this job sheet will enable you to locate specific maintenance information pertaining to aircraft. It is imperative that you remain alert and attentive during this job assignment. The information for answering the questions below can be found in the Maintenance Instruction Manual or MIARS microfilm, "General Information and Servicing, NAVAIR 01-40AVC-2-1." The frame number for the table of contents in the microfilm is 0004. Locate and fill in the missing information for each question.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.5.

Supported entirely by this lesson topic:

1.5.1 through 1.5.23.

REFERENCES:

1. Maintenance Instruction Manual, Navy Model A-4E and A-4F Aircraft, General Information and Servicing, NAVAIR 01-40AVC-2-1.
2. MIARS Microfilm A4.8, NAVAIR 01-40AVC-2-1, 2-1.1, 2-2, 2-2.1, and 2-2.2.

EQUIPMENT AND MATERIALS:

1. Maintenance Instructions Manual, General Information and Servicing, NAVAIR 01-40AVC-2-1. (CNTT-M665 PAT)
2. MIARS portable reader.
3. MIARS microfilm A4.8.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

1. Use the following procedures to answer the questions listed below:
 - a. Determine the job or information needed.
 - b. Determine the manual by NAVAIR number.
 - c. Determine the volume and section.
 - d. Select the job in the alphabetical index that you are performing.
 - e. Select the section and page number.
 - f. Turn to that section and page number and read all written information before going to figures or tables.
2. Locate the necessary information in the appropriate manual and complete the statements below, recording information and reference used.
 - a. The maintenance safety precaution that the mechanic must adhere to before servicing the oxygen system is: do not service oxygen with _____ connected to aircraft and _____ or _____ equipment operating in area. Found in table _____, page _____.
 - b. When towing an aircraft forward, do not exceed _____ while towing along a straight path. Paragraph _____, page _____, figure _____.
 - c. Oxygen and nitrogen are consumable materials used to service oxygen systems, and canopy & hydraulic systems. Oxygen is item _____ and nitrogen is item _____ in table _____, page _____.

- d. When servicing the liquid oxygen system, what items of protective clothing must be worn?
- 1) _____, 2) _____, 3) _____,
4) _____, 5) _____. Page _____,
paragraph _____, figure _____.
- e. When servicing the liquid oxygen system with the liquid oxygen servicing trailer, the proper filling pressure is _____ to _____ psi. Page _____,
paragraph _____.

Instructor's initials _____

3. Locate the necessary information in the appropriate MIARS microfilm. Complete the statements below and provide frame, paragraph, figure, or table numbers, if necessary.
- a. In order to gain emergency entrance to the cockpit, if the pilot has not opened the canopy or appears unable to do so, is to pull _____
_____, located on _____
of the fuselage. Page _____, paragraph _____,
figure _____, frame _____.
- b. The periodic lubrication charts for the A-4 aircraft begins on page _____, figure _____,
frame _____.
- c. The lubricant used to lubricate the canopy pneumatic bungee piston rod eyebolt is _____ and is applied with a _____ during _____ inspections.
Frame _____.

d. When jacking the complete aircraft, how many personnel are required to do this operation? _____
Page _____, figure _____, frame _____.

e. Using the Master Support Equipment List, table _____
and figure 2-102, What is the purpose of item 246?

_____. Frame _____.

Instructor's initials _____

JOB SHEET 2.4.2J

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

TIME: .5 Hours

INTRODUCTION

The information on this job sheet will enable you to locate specific maintenance information pertaining to aircraft. It is imperative that you remain alert and attentive during this job assignment. The information for answering the questions below can be found in the MIARS microfilm, "Airframes," NAVAIR 01-40AVC-2-2. The frame number for the table of contents in the microfilm is 0629. Locate and fill in the missing information for each question.

TERMINAL OBJECTIVES

Supported partially by this lesson topic:
1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:
1.2 and 1.5.

Supported entirely by this lesson topic:
1.5.1 through 1.5.23.

REFERENCES:

MIARS Microfilm A4.8, NAVAIR 01-40AVC-2-1, 2-1.1, 2-2, 2-2.1, and 2-2.2

EQUIPMENT AND MATERIALS:

1. MIARS portable reader.
2. MIARS microfilm A4.8.

PRECAUTIONS TO BE OBSERVED: None

JOB STEPS:

1. Use the following procedures to answer the questions below.
 - a. Determine the job or information needed.
 - b. Determine the manual by NAVAIR number.
 - c. Determine the volume and section.
 - d. Select the job that you are performing in the table of contents.

- e. Select the section, page number, and frame number.
 - f. Turn to that section, page number, frame number and read all written information before going to figures or tables.
2. Locate the necessary information in the appropriate MIARS microfilm. Complete the statements below and provide frame, figure, or tables, if necessary.
- a. Figure 2-33 is showing a picture of what aircraft compartment?
_____ Page _____,
frame _____.
 - b. Using Table 3-1, what is the disposition of crazing on a plastic panel? _____
Page _____, frame _____.
 - c. The maintenance procedures for removal of the nose radome is found on page _____, paragraph _____, frame _____.
 - d. The removal procedures for the windshield is illustrated in figure _____, page _____, paragraph _____, frame _____.
 - e. How many men are required to remove the electronic equipment compartment? _____
Page _____, frame _____.

Instructor's initials _____

JOB SHEET 2.4.3J

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

TIME: .5 Hours

INTRODUCTION

The information on this job sheet will enable you to locate specific maintenance information pertaining to aircraft. It is imperative that you remain alert and attentive during this job assignment. The information for answering the questions below can be found in the MIARS microfilm, "Personnel Environmental Systems," NAVAIR 01-40AVC-2-2.3. The frame number for the table of contents in the microfilm is 0004. Locate and fill in the missing information for each question.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2 and 1.5.

Supported entirely by this lesson topic:

1.5.1 through 1.5.23.

REFERENCES:

1. Maintenance Instruction Manual, Navy Model A-4E and A-4F Aircraft, Personnel Environmental Systems, NAVAIR 01-40AVC-2-2.3.
2. MIARS Microfilm A4.9, NAVAIR 01-40AVC-2-2.3, 2-2.4, 2-3.

EQUIPMENT AND MATERIAL:

1. Maintenance Instruction Manual, Personnel Environmental Systems, NAVAIR 01-40AVC-2-2.3.
2. MIARS portable reader.
3. MIARS microfilm A4.9.

PRECAUTIONS TO BE OBSERVED:

None

JOB STEPS:

1. Use the following procedures to answer the questions below.
 - a. Determine the job or information needed.
 - b. Determine the manual by NAVAIR number.
 - c. Determine the volume and section.
 - d. Select the job that you are performing in the alphabetical index.
 - e. Select the section and page number.
 - f. Turn to that section and page number and read all written information going to figures or tables.
2. Locate the necessary information in the appropriate manual and complete the statements below, recording information and reference used.
 - a. Using Table _____ "Other Related Publications and Directives," what is the publication/directive number for the manual on "Liquid Oxygen Converter 0101-0C08"?
_____. Page _____.
 - b. What are the torque requirements for the rain removal-pressure regulator valve connection? _____ to _____ foot pounds. Table _____, page _____.
 - c. Using section II, the air conditioning system is functionally interrelated with the _____ system, and the _____ system. Paragraph _____, page _____.
 - d. Where would you find information on the air conditioning system foot warmers? Page _____, paragraph _____.

- e. When maintenance on the air proportioning valve and actuator is being done, what must be removed to gain access to the air proportioning valve and actuator?

_____ and _____.

Page _____, paragraph _____.

- f. During troubleshooting of the windshield defrost system, what is the probable cause if no air can be directed to the windshield?

1. _____

2. _____

3. _____

page _____ table _____

- g. What is the nomenclature of figure 3-105A?

_____.

- h. What are the manpower requirements for an operational test of a personnel environmental system?

_____. page _____ paragraph _____

Page _____, table _____, frame _____.

Instructor's initials _____

3. Locate the necessary information in the appropriate MIARS microfilm. Complete the statements below and provide frame, figure, or tables, if necessary.

- a. The canopy pressure seal "Theory of Operation," can be found on page _____, paragraph _____, frame _____.

b. Using the table on canopy pressure sealing system-troubleshooting/fault isolation, what are the probable cause/causes if the canopy pressure seal will not inflate? 1. _____

2. _____

3. _____

Page _____, table _____, frame _____.

c. What is the size of the rain repellant fluid container? _____.

Page _____,

paragraph _____, frame _____.

d. What is the title of figure 2-49? _____

Page _____, frame _____.

e. When troubleshooting the liquid oxygen system, what is the probable cause if the converter will not fill?

_____.

Table _____, page _____, frame _____.

Instructor's initials _____

JOB SHEET 2.4.4J

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

TIME: .5 Hours

INTRODUCTION

The information on this job sheet will enable you to locate specific maintenance information pertaining to aircraft. It is imperative that you remain alert and attentive during this job assignment. The information for answering the questions below can be found in the Maintenance Instruction Manual or MIARS microfilm, "Canopy and Survival Systems," NAVAIR 01-40AVC-2-2.4. The frame number for the table of contents in the microfilm is 0441. Locate and fill in the missing information for each question.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.5

Supported entirely by this lesson topic:

1.5.1 through 1.5.23

REFERENCES:

1. Maintenance Instruction Manual, Navy Model A-4E and A-4F Aircraft, Canopy and Survival Systems, NAVAIR 01-40AVC-2-2.4.
2. MIARS Microfilm A4.9, NAVAIR 01-40AVC-2-2.3, 2-2.4, 2-3.

EQUIPMENT AND MATERIALS:

1. Maintenance Instruction Manual, Canopy and Survival Systems, NAVAIR 01-40AVC-2-2.4.
2. MIARS portable reader.
3. MIARS microfilm A4.9.

PRECAUTIONS TO BE OBSERVED:

None

JOB STEPS:

1. Use the following procedures to answer the questions listed below.
 - a. Determine the job or information needed.
 - b. Determine the manual by NAVAIR number.
 - c. Determine the volume and section.
 - d. Select the job you are performing in the alphabetical index.
 - e. Select the section and page number.
 - f. Turn to that section and page number and read all written information before going to figures or tables.
2. Locate the necessary information in the appropriate manual and complete the statements below, recording information and reference used.
 - a. Using the torque requirement table, find the torque requirement for the canopy pneumatic bungee filler valve hex nut. _____. Table _____, page _____.
 - b. What is the description of the canopy? _____

Page _____, paragraph _____.
 - c. What does figure 2-4 illustrate? _____
Page _____.
 - d. The canopy pneumatic bungee nitrogen cylinder is a _____, _____ steel cylinder which contains nitrogen at _____ psi pressure.
Page _____, paragraph _____.

- e. The ejection control safety handle bears a decal,
stenciled in _____ and _____, which reads,
_____ to _____
_____. Page _____,
paragraph _____.
- f. The NB-10 parachute assembly is designed for use with the
_____ ejection seat. Page
_____, paragraph _____.
- g. What are the manpower requirements for canopy maintenance
removal? _____. Page _____,
paragraph _____.

TOTAL POINTS _____

INSTRUCTOR'S INITIALS _____

3. Locate the necessary information in the appropriate MIARS
microfilm. Complete the statements below and provide frame,
figure, or tables, if necessary.
- a. During canopy maintenance installation, what is meant when
a step is underlined? _____
Frame _____. Page _____ paragraph _____.
- b. What tools and equipment are required for removal of the
canopy jettison initiator (M-99)? _____

_____. Page _____,
paragraph _____, frame _____.

c. What is the purpose of the ejection control safety handle?

Page _____, paragraph _____,
frame _____.

d. What figure shows the separation system initiator arming
hose disconnect? Figure _____, page _____,
frame _____.

e. What is the total weight of an IC3 ejection seat?
_____. Table _____, page _____,
frame _____.

TOTAL POINTS _____

INSTRUCTOR'S INITIALS _____

JOB SHEET 2.4.5J

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

TIME: .5 Hours

INTRODUCTION

As an AME you will be required to perform maintenance on various aircraft oxygen systems. To facilitate proper maintenance procedures, the use of the appropriate Maintenance Instructions Manual is important. This job sheet describes the Maintenance Instruction Manual usage and aids you in finding the needed information to perform required maintenance safely and effectively.

The procedure shown in using the Maintenance Instructions Manual in this program are essentially the same for all Maintenance Instructions Manuals.

You have the responsibility to yourself and your co-workers to learn this material well. Once in the fleet you should exercise good judgment along with strict adherence to the rules and procedures set forth in the appropriate Maintenance Instructions Manual when performing any maintenance on naval aircraft.

As Aviation Structural Mechanic E (Safety Equipment) personnel progress in the maintenance of gaseous oxygen systems, it becomes necessary to consult applicable Maintenance Instructions Manuals for proper procedures to follow in troubleshooting malfunctions in the system, removal of system components, and replacement of components.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2 and 1.5.

Supported entirely by this lesson topic:

1.5.1 through 1.5.23.

REFERENCE:

1. Maintenance Instruction Manual, Navy Model P-3A, P-3B, P-3C Aircraft, Safety and Survival, NAVAIR 01-75PAA-2-2.3.

EQUIPMENT AND MATERIALS:

Maintenance Instructions Manual, Navy Models P-3A, P-3B, and P-3C Aircraft, Safety and Survival, NAVAIR 01-75PAA-2-2.3.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

1. Use the following procedures to answer the questions listed below.

- a. Determine the job or information needed.
- b. Determine the manual by NAVAIR number.
- c. Determine the volume and section.
- d. Select the job that you are performing in the alphabetical index.
- e. Select the section and page number and read all written information before going to figures or tables.

2. Locate the necessary information in the manual provided. Complete the statements below, giving page number, figure number, or table number, if necessary.

- a. What publication has the information to complete a task that involves a P-3 aircraft gaseous oxygen systems?

_____.

- b. The check valve manifold is located between the

_____, and the _____.

Page _____, paragraph _____.

- c. The high pressure gage is calibrated from _____

to _____ psi. Page _____,

paragraph _____.

- d. How many men are required to remove a pilot's pressure demand regulator? _____.

Page _____, paragraph _____.

- e. What materials are required to install a check valve manifold? _____
Page _____, paragraph _____.
- f. What is the figure number for an oxygen servicing truck?
Figure _____, page _____.
- g. What is the page number and figure number of the oxygen regulator schematic? Page _____, figure _____.
- h. What is the approximate length of the escape rope?
_____. Page _____, paragraph _____.
- i. Where is the oxygen filler valve located? _____

_____. Page _____,
paragraph _____.
- j. On what page is the oxygen temperature correction chart found? Page _____.

INSTRUCTOR'S INITIALS _____

ASSIGNMENT SHEET 2.4.1A

LOCATING MAINTENANCE INSTRUCTIONS FOR AIRCRAFT COMPONENTS

INTRODUCTION

Because the modern-day aircraft is a complex piece of equipment, proper maintenance must be ensured. For this reason, Maintenance Instructions Manuals (MIM) are used to locate the defective part before any corrective maintenance is performed. It is impossible for any one man to remember all the necessary information for the safe and efficient maintenance of an aircraft. For this purpose, we have various publications to aid us. We are not here to memorize the content of these publications, but to learn their purpose and how to use them.

TERMINAL OBJECTIVES

Supported partially by this lesson topic:

1.0

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2 and 1.5.

Supported entirely by this lesson topic:

1.5.1 through 1.5.23.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.4.1N.
2. Read pages 1-18 through 1-21 in the Aviation Structural Mechanic E, 3 & 2, NAVEDTRA 10309-D.
3. Using the above as references, answer the following study questions.

STUDY QUESTIONS

1. What is the purpose of MIM's?
2. What are the three major parts of the MIM's?

3. What section in the General Information and Servicing MIM lists access panels?
4. What is the title and the section of the MIM that relates to aircraft servicing?
5. What is the title and the section of the MIM that relates to aircraft handling?
6. What is the title and the section of the MIM that relates to safety precautions?
7. What section in the systems manual has information that pertains to description and operation of an aircraft system?
8. What class of maintenance instructions is found in Section III of the systems manual?
9. Organizational and squadron maintenance is covered in what section of the systems MIM?
10. What major part of the MIM does the mechanic use the most?

NOTETAKING SHEET 2.5.1N

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS

REFERENCES:

1. Illustrated Parts Breakdown, Navy Models A-4F and A-4F aircraft, General Aircraft Information and Numerical Index, Volume I, NAVAIR 01-40 AVC-4-1.
2. Illustrated Parts Breakdown, Navy Models A-4E and A-4F aircraft, Ejection system, Air Conditioning System, and Cockpit Equipment, Volume VI, NAVAIR 01-40AVC-4-6.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Special Support Equipment, Volume IX, NAVAIR 01-40AVC-4-9.
4. Aviation Structural Mechanic E, 3&2, NAVEDTRA 10309-D, Chapter 1, page 1-21 through 1-27.

NOTETAKING OUTLINE:

- A. Purpose of the Illustrated Parts Breakdown Manual (IPB). The IPB is designed to enable supply and maintenance personnel to identify and _____ for a specific type of aircraft.
- B. Organization of the Illustrated Parts Breakdown. The IPB consists of many separate volumes, each covering a different _____ or _____.
 1. Volume I, General Information and Numerical Index.
 - a. Table of contents.
 - (1) Contains an alphabetical listing of aircraft _____ parts and covers the entire IPB.
 - (2) Lists the volume and _____ of the part.
 - b. Sections.
 - (1) Section I, Introduction.
 - (a) States the _____ of the IPB.
 - (b) Gives instructions on its use.
 - (2) Section II, Numerical Index.
 - (a) Contains an alphanumeric listing of parts numbers. (see figure 2.5.1).

(b) Used to cross reference the part number to volume, figure, index number and source, maintenance, and recoverability (SM&R) codes.

1. Part number sequence is dashes, slashes, letters, then numbers.
2. SM&R codes tell the supply and maintenance personnel the source for acquiring the item(s); the lowest level of maintenance authorized to remove, replace, and repair the item (M); and the policy of the item (R). Code break-downs are found in a separate publication. (See figure 2.5.2)

PART NUMBER	VOL.	FIGURE AND INDEX NUMBER	CODES	PART NUMBER	VOL.	FIGURE AND INDEX NUMBER	CODES
AN227-10PM	8	48A-30	P10Z0	AN23-10	8	41-48	P10Z0
AN227-10B410	8	46-8	P10Z0	AN23-10A	3	24-5	P10Z0
AN227-10B46	8	48A-27	P10Z0		4	48-20	P10Z0
AN227-10B10	5	28-32	P10Z0	AN23-11	3	47-73	P10Z0
	5	28-49	P10Z0		3	57-9	P10Z0
AN227-10B5	5	12-25	P10Z0		4	48-16	P10Z0
	5	12-57	P10Z0		7	113-31	P10Z0
	6	23A-54	P10Z0	AN23-11A	3	47-37	P1 C
	8	48-27	P10Z0	AN23-12	3	41-40	P10Z0
AN227-11B	4	11-17	P1 C		3	44-3	P1CZ0
AN227-12B	4	11-18	P1 C		3	44A-4	P1CZ0
AN227-13B	4	11-19	P10Z0		4	94-8	P1CZ0
	6	38-22	P10Z0		4	111-15	P1CZ0
	6	39-18	P10Z0	AN23-13	2	60-12	P10Z0
	6	39A-43	P10Z0		3	6-4	P10Z0
AN227-14B	4	11-20	P1 C		3	10-65	P1CZ0
AN227-6B	5	12-26	P10Z0		3	44-4	P10Z0
	5	12-45	P10Z0		3	44A-5	P1CZ0
	5	13-25	P10Z0		3	48-8	P10Z0
	5	17-53	P10Z0		3	56-3	P10Z0
	5	18-77	P10Z0		4	48-55	P1CZ0
	5	19-34	P10Z0		6	13-35	P1CZ0
	5	21-54	P10Z0		6	18-43	P10Z0
	5	24-41	P10Z0	AN23-14	3	29-37	P10Z0
	5	25-9	P10Z0		3	56-6	P1CZ0
	5	27-28	P10Z0		3	75-24	P10Z0
	5	28-29	P10Z0		4	48-27	P10Z0
	6	16-29	P10Z0		4	68-6	P1CZ0
	8	48-7	P10Z0		4	69-6	P1CZ0
	8	48A-33	P10Z0		6	10-61	P10Z0
AN227-62B	6	25-12	P1 C		6	20-20	P1CZ0
	6	42-7	P1 C	AN23-14A	3	47-83	P1 C
AN227-A3B	6	42-6	P1 C	AN23-15	3	60-81	P10Z0
AN227-64B	6	23A-6	P1 C		3	62-83	P1CZ0
	6	42-3	P1 C		4	48-34	P1CZ0
AN227-67B	6	25-13	P1 C		4	68-40	P10Z0
AN227-68B	6	22A-42	P10Z0		4	69-28	P10Z0
AN227-7B	5	12-27	P10Z0		4	89-2	P1CZ0

FIGURE 2.5-1--Numerical Index.

P10GD

P1-- Source code, item which is procurable.
O--- Organizational level removes and replaces.
G--- Intermediate level, both ashore and afloat, repairs
D--- Depot level condemns.

P30ZO

P3-- Source code, item which is procurable but is also
deteriorative.
O--- Organizational level removes and replaces.
Z--- No repair authorized.
O--- Organizational level condemns.

Figure 2.5-2-SM&R CODES

(3) Section III, Reference Designation Index-
Contains a complete alphanumerical listing of
reference _____ (Identifiers)
assigned to replaceable electrical and
electronic parts.

2. System volumes.

- a. Table of contents. The table of contents contains an
alphabetical listing of parts found in that volume
_____.
- b. Sections. Systems manuals have two sections, which
are:

(1) Section I, Introduction. This section lists the
_____ for that volume.

(a) The usable-on code designates the bureau
number of the aircraft on which the part can
be used.

(b) If no code is listed, it may be used on all
aircraft covered by the publication.

(2) Section II, Group Assembly Parts List.

(a) Illustration page.

1. The illustration page shows a detailed
illustration of the _____ or
component in a
identification

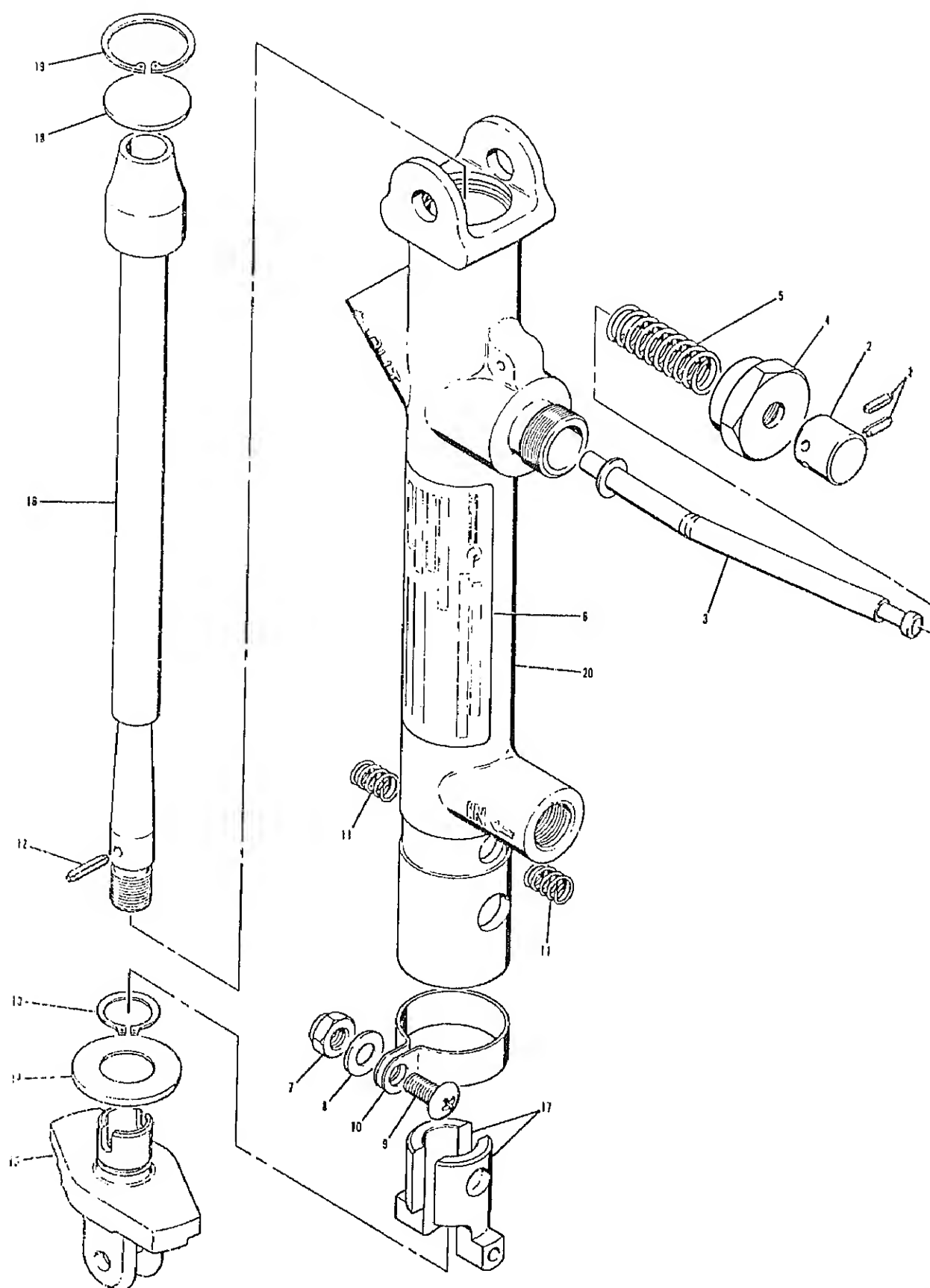


Figure 40A - Escapac Harness Release Actuator (A-4F)

GG4-6-28

FIGURE 2.6-3--Illustration Page.

2. It is not to be considered as an authority for assembly, disassembly, or reassembly of _____.
- (b) Description and Nomenclature Page. (See figure 2.5-4)
1. Figure and index number- The figure and index number identifies the items on the _____.
 2. Part number- The description and nomenclature page lists the part numbers for the index numbers.
 3. Description
 - a. States the name of the item and gives the _____ (vendor's) code.
 - 1) Manufacturer's code is a five digit code in parenthesis following the description.
 - 2) Not all part numbers will have a manufacturer's code.
 - b. Used to find the next higher assembly (NHA).
 - 1) To find the next higher assembly notice how the description column is subdivided vertically into seven columns.
 - 2) Note how index number 1 begins in the second column and the nomenclature of the actuator begins in the first.
 - 3) The actuator is the next higher assembly of the pin.
 - 4) Next higher assemblies can also be found in the description column referring you to another figure to locate the next higher assembly.

FIGURE & INDEX NO.	PART NUMBER	DESCRIPTION							U A	USE CODE
		1	2	3	4	5	6	7		
40A	D115120-501	ACTUATOR ASSY, ESCAPAC HARNESS RELEASE (AFC 489) (SEE FIG. 23 FOR NHA)							REF	GAA
- 1	NAS561P3-5	PIN							2	GAA
- 2	2812281	KNOB, HARNESS RELEASE ACTUATOR RESET							1	GAA
- 3	2678128-501	PIN, HARNESS RELEASE ACTUATOR MANUAL CATCH							1	GAA
- 4	2810372	NUT, SPRING RETAINING							1	GAA
- 5	2678130-503	SPRING, HARNESS RELEASE ACTUATOR CATCH							1	GAA
- 6	C115124-501	NAMEPLATE, ESCAPAC HARNESS RELEASE ACTUATOR							1	GAA
- 7	MS21083D3	NUT							1	GAA
- 8	AN960D10L	WASHER							1	GAA
- 9	NAS221-6	SCREW							1	GAA
- 10	AN735-16	CLAMP							1	GAA
- 11	2810892-501	SPRING, HARNESS RELEASE ACTUATOR LOCK							2	GAA
- 12	NAS561C3-8	PIN							1	GAA
- 13	NAS670-50	RING							1	GAA
- 14	2678146	STOP, HARNESS RELEASE ACTUATOR PISTON							1	GAA
- 15	4821389-1	CLEVIS, HARNESS RELEASE ACTUATOR							1	GAA
- 16	D115123-1	PISTON, ESCAPAC HARNESS RELEASE ACTUATOR							1	GAA
- 17	2810893	DOG, HARNESS RELEASE ACTUATOR LOCKING							1	GAA
- 18	B115122-1	CAP, ESCAPAC HARNESS RELEASE ACTUATOR							2	GAA
- 19	MS16625-1081	RING							1	GAA
- 20	D115121-1	HOUSING, ESCAPAC HARNESS RELEASE ACTUATOR							1	GAA

FIGURE 2.5-4 Description and nomenclature page.

4. Units per assembly

- a. The units per assembly indicates the quantity used on a _____.
- b. If the letters REF appear in this column, this is a reference and cannot be used to order. You must refer to the next higher assembly to locate quantity.
- c. If the letters AR appear, it indicates, "as required", and you can order as many as you require.

5. Usable-on code (use code). This column lists the three letter use code used to match parts with aircraft bureau numbers found in section I of the systems volume (See figure 2.5-5)

C. Organization of the MIARS Illustrated Parts Breakdown.

- 1. The MIARS Illustrated Parts Breakdown is arranged the same as the manual publications.
- 2. The only difference is that the manual pages are transposed to microfilm giving frame numbers in addition to page numbers to locate information.

D. Procurement of aviation materials

1. Material control work center (organizational level)

- a. Purpose. The material control work center is the contact point within the maintenance organization that coordinates the ordering of parts and materials between the main supply support center and the maintenance department.
- b. Responsibilities. The material control work center is responsible to the maintenance and material control officer for:
 - (1) _____.
 - (2) _____.
 - (3) _____.
 - (4) Acting as a liaison between the maintenance organization and the supply support center.

Usable on Codes

The absence of a code symbol in the "Use Code" column designates the parts listed are usable on all aircraft covered in this publication.

-A-			
AAA	149647-149666	ABD	149647-149652, 149654
AAB	149647-149654	ABE	149659-149666
AAC	149655-149666	ABF	149647-149649, 149651, 149652
AAD	149647-149652	ABG	149647-149660
AAE	149653-149666	-B-	
AAF	149651, 149655-149666	BAA	149959-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAG	149647-149650, 149652-149654	BAB	150049-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAH	149653, 149654	BAC	150019-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAJ	149647-149650	BAD	149959-150048
AAK	149651-149666	BAE	149989-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAL	149651, 149653-149666	BAF	149964-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAM	149647-149650, 149652	BAG	149989-150018
AAN	149651, 149653, 149654	BAH	149959-149988
AAP	149647-149651	BAJ	150000-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAR	149652-149666	BAK	149960, 150079-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAS	149647-149652, 149654-149666	BAL	149980-150138, 151022-151201, 151984-152100, 154172-154217, 154970-155069
AAT	149647-149653		
AAU	149647, 149648		
AAV	149647-149656		
AAW	149654-149666		
AAX	149653		
AAZ	149647-149658		
	149647-149659		

FIGURE 2.5.5--Usable-on Codes.

2. Material control work center (intermediate level)
 - a. Purpose. Intermediate level material control work centers have the additional responsibility of establishing a unit which will screen the influx of repairable items.
 - b. Responsibilities of this screening unit are as follows:
 - (1) Screens all defective and overage material generated by the tenant organizational activities, production departments, or the supply system.
 - (2) Determines if the material is within the repair capability of the activity.
 - (3) Establishes pickup and delivery points for all material required or turned in by the production divisions.
 - (4) Ensures that all necessary documents accompany the component.
 - (5) When directed by the maintenance and material control officer, the material control work center will deliver the repairable item to the appropriate work center.
3. Maintenance and material control officer. Responsible to the maintenance officer for the overall production effort and the material support of the division or department at either the organizational or intermediate level of maintenance.
4. Requisitioning material
 - a. Worker
 - (1) When the need for a part becomes evident to an AME working on an assigned maintenance task, the supervisor is immediately notified.
 - (2) Then, using the appropriate IPB, the worker fills out blocks 14, 19, 34, and 41 in the failed and required material area of the VIDS/MAF for each part necessary to complete the task. (See figure 2.6-6)

- b. Work center supervisor
 - (1) Screens the VIDS/MAF for accuracy.
 - (2) Delivers the VIDS/MAF to maintenance control.
- c. Maintenance control
 - (1) Screens the VIDS/MAF for accuracy.
 - (2) Assigns a priority to the material in block 43 of the VIDS/MAF.
 - (3) Delivers the VIDS/MAF to material control.
- d. Material control
 - (1) Converts the information in blocks 14 (manufacturer's code) and 19 (part number) into a national stock number.
 - (2) Ensures unit of issue.
 - (3) Transfers all information to the appropriate requisition form.
 - (4) Fills in blocks 45 and 49 of the VIDS/MAF before returning it to the originating work center.
 - (5) Transmits the requirement for the material to the local supply support center.
- e. When the part is available locally, it will be delivered within the allowed time according to the priority assigned. When the part is not available locally, material requests are forwarded to the main supply support center for off-station processing.
- f. When the part is ready for delivery, the supply response section (SRS), a branch of the local supply support center, will deliver all parts to the material control work center that ordered them.
- g. The material control work center will deliver all received parts and material to the work center that ordered them.

ENTRIES REQUIRED SIGNATURE.

WORK CENTER MDR VERIFICATION COPY

USE BALL-POINT PEN PRESS HARD

NONE LOGS REC

VIDS/MAF OPNAV 4790 60 (REV 2-82) S N 0107-LF-047-9304

--	--	--	--

[illegible][illegible]

- FOLD

FOLD										TECHNICAL DIRECTIVE IDENTIFICATION						
A42 WORK UNIT CODE	A20 ACTION ORG	A32 TRANS	A14 MAINFL	A35 ACT TAKEN	A16 M41 CODE	A30 ITEM/VP	A11 M4H HOURS	A45 FRAPSED M/T	FOR INTERIM	EDW CODE	F51 BASIC NO	F15 RV	F16 AM	F17 PART	F18 RH	
A44 TYPE LOUP	A52 BU/SER NUMBER	A56 DISCD	A59 T/M	A60 POSIT	A67 FID	A68 NAME/PL SER	A65 MLTN	CP M/CH	A74	A75	INVENTORY		122 PERM UNIT CODE			A78

REPAIR CYCLE			REMOVED/OLD ITEM			INSTALLED/NEW ITEM		
	DATE	TIME	EOC	E08 MFR#	E13 SERIAL NUMBER	G08 MFR#	G13 SERIAL NUMBER	
RECEIVED	B08	B12	B16					
IN WORK	B19	B23	B27	E23 PART NUMBER	E38 DATE REMOVED	E23 PART NUMBER		
COMPLETED	B30	B34		E42 TIME/CYCLES	E47 TIME/CYCLES	E62 TIME/CYCLES	G38 TIME/CYCLES	
AWAITING MAINTENANCE						G43 TIME/CYCLES	G48 TIME/CYCLES	

B38	B39 HOURS	B43	B44 HOURS	B48	B49 HOURS	DISCREPANCY	
MAINTENANCE/SUPPLY RECORD							
JOB STATUS	DATE	TIME	EOC				
B53	B54	B58	B62				
B65	B66	B70	B74			PILOT INITIATOR	
C08	C09	C13	C17				
C20	C21	C25	C29			CORRECTIVE ACTION	
C32	C33	C37	C41				
C44	C45	C49	C53				
C56	C57	C61	C65				
D08	D09	D13	D17			<div style="display: flex; justify-content: space-around;"> <div> CF REQ <input type="checkbox"/> </div> <div> CH REQ <input type="checkbox"/> </div> </div>	
JOB CONTROL NUMBER				A18 WORK CENTER			
ACB ORG	A11 DAY	A14 SER	A17 SUF	UP DOWN <input type="checkbox"/>	MODEX	PRI	TURN-IN DOCUMENT
				SYSTEM/REASON		MCN	

FIGURE 2.6-6--VIDS/MAF

5. Rotatable pool

- a. Many components which meet required conditions can be found in the rotatable pool. This pool operates on a one-for-one swapping basis.
- b. The requirements, which all must be met, for getting a component into the rotatable pool are as follows:
 - (1) Be repairable by the local intermediate maintenance activity.
 - (2) Have an average removal rate of at least once per month.
 - (3) Have an application to a weapons system (aircraft) supported by the local intermediate maintenance activity.

6. Pre-expended material

- a. These materials are common repair parts, which are considered to be high in usage, low in unit cost, and consumable (one-time use). Parts, such as nuts, bolts, hydraulic seals, and fittings, are found in pre-expended bins.
- b. Pre-expended bins are usually found in a central location and will support the aircraft in that area.
- c. Sometimes the need for a new item or the reduction in usage of an old item arises. In order to add to or delete from the pre-expended bins, the supply officer and the maintenance officers must agree.

7. Cannibalization

- a. Cannibalization is the removal of serviceable parts from a downed aircraft for the repair of other damaged aircraft.
- b. The maintenance and material control officer is responsible for establishing the procedures for controlling and directing cannibalization.

JOB SHEET 2.5.1J

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS WHEN THE PART NUMBER IS KNOWN

TIME: _____

INTRODUCTION

During the lab session you will be required to look up information using the Illustrated Part Breakdown to reinforce the classroom learning experience covering this material. Pay particular attention to the layout of the materials.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.4.

Supported entirely by this lesson topic:

1.4.1 through 1.4.7.

REFERENCES:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-1, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E, and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air Conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment
4. Aviation Structural Mechanic E 3&2, NAVEDTRA 10309-D, Chapter 1, pages 1-21 through 1-27.

EQUIPMENT AND MATERIALS:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-1, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air Conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment.

Precautions to be observed: None.

JOB STEPS:

When the part number is known follow the five steps to answer the below listed questions.

1. Go to the Illustrated Parts Breakdown for the specific type aircraft.
 2. Select the General Information and Numerical Index Volume.
 3. Go to section II of the Numerical Index and select the part number which is listed in alphanumerical order.
 4. Select the volume number.
 5. Select the figure, index number, source code, maintenance code and recoverability code as required.
-
1. Locate all available information for part number (P/N) 17.
Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

2. Locate all available information for part number (P/N)

199000-1.

Volume _____ Page Number _____ Figure Number _____

Index Number _____ Part Number _____ SM&R code _____

Nomenclature _____

Units per assembly (U/A) _____ Usable-on Code _____

_____. Vendor (manufacturer) Code _____

Next higher assembly (NHA) _____.

3. Locate all available information for part number (P/N) 28-1C.

Volume _____ Page Number _____ Figure Number _____

Index Number _____ Part Number _____ SM&R code _____

Nomenclature _____

Units per assembly (U/A) _____ Usable-on Code _____

_____. Vendor (manufacturer) Code _____

Next higher assembly (NHA) _____.

4. Locate all available information for part number (P/N)

BL8-1.687.

Volume _____ Page Number _____ Figure Number _____

Index Number _____ Part Number _____ SM&R code _____

Nomenclature _____

Units per assembly (U/A) _____ Usable-on Code _____

_____. Vendor (manufacturer) Code _____

Next higher assembly (NHA) _____.

5. Locate all available information for part number (P/N)
4672769.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

INSTRUCTOR'S INITIALS _____

JOB SHEET 2.5.2J

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS WHEN
THE PART NUMBER IS KNOWN (MIARS)

TIME: _____

INTRODUCTION

During the lab session you will be required to look up information using the MIARS microfilm of Illustrated Parts Breakdown. Pay particular attention to the layout of the materials.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.4.

Supported entirely by this lesson topic:

1.4.1 through 1.4.7.

REFERENCES:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-1, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E, and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air Conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment.
4. Aviation Structural Mechanic E 3&2, NAVEDTRA 10309-D, Chapter 1 Pages 1-21 through 1-27.

EQUIPMENT AND MATERIALS:

1. MIARS Reader.
2. MIARS Microfilm A4.14 and A4.15.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

When the part number is known follow the steps listed to answer the questions.

1. Go to the appropriate Illustrated Parts Breakdown MIARS microfilm for the specific type aircraft. (A4.14 and A4.15)
 2. Select the general information and numerical index volume (4-1) using the cartridge index list on the microfilm tape.
 3. Using the table of contents, find Section II of the numerical index. This index lists some of the parts numbers in alphanumerical order. Check to see where your part number is listed. Then turn to the search number listed (small number on lower right side of page).
 4. Using information given in the numerical index, locate the proper volume number, figure, index number & SM&R codes as required.
 5. Using cartridge index on front of microfilm tape volume; find the figure number needed and turn to search number listed.
 6. Locate the list of instructions in the appropriate volume. Find the figure number needed and turn to search number listed.
 7. Turn to description and nomenclature page for that figure and locate index number. Record information that is required.
-
1. Locate all available information for part number 9442791-87
Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

2. Locate all available information for part number X2-10128A177K.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

3. Locate all available information for part number 256000-1.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

4. Locate all available information for part number FR29A1A.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

5. Locate all information available for part number 3827856-1.

Volume _____ Page Number _____ Figure Number _____

Index Number _____ Part Number _____ SM&R code _____

Nomenclature _____

Units per assembly (U/A) _____ Usable-on Code _____

_____. Vendor (manufacturer) Code _____

Next higher assembly (NHA) _____.

INSTRUCTOR'S INITIALS _____

JOB SHEET 2.5.3J

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS WHEN
THE PART NUMBER IS UNKNOWN (PAPER MIM)

TIME: _____

INTRODUCTION

The following lab session requires that you look up information using the Illustrated Parts Breakdown. In order to simplify this procedure we have given you step by step instructions to find the necessary information.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.4.

Supported entirely by this lesson topic:

1.4.1 through 1.4.7.

REFERENCES:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-1, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E, and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment.
4. Aviation Structural Mechanic E 3&2, NAVEDTRA 10309-D, Chapter 1 Pages 1-21 through 1-27.

EQUIPMENT AND MATERIALS:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, International Models A-4G, A-4H, and A-4K Aircraft, NA01-40AVC-4-1, 15 December 1969, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E, and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air Conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

When the Part Number is unknown:

1. Go to the Illustrated Parts Breakdown for the specific type aircraft.
2. Go to the Major System Volume where the part is located.
3. Go to the Table of Contents in the Major System Volume and select the name of the part (parts are in alphabetical order).
4. Select the page number for the part.
5. Go to Section II, Group Assemblies Parts List of the Major System Volume. (A figure page gives a breakdown of the assembly and identifies each part with a index number.)
6. Locate the description page and check figure and index number.
7. Locate part number.
8. Breakdown usable on code in Section One, Introduction of the Major System Volume, to determine BuNo. aircraft the part will fit.

1. Locate all available information for a pressure regulator open end wrench.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

2. Locate all available information for an underwater jettison relief valve link assembly.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

3. Locate all available information for a temperature controller assembly.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

4. Locate all available information for a pressure regulator and shutoff valve butterfly assembly.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

5. Locate all available information for a rear view mirror.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

INSTRUCTOR'S INITIALS _____

JOB SHEET 2.5.4J

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT PARTS WHEN
THE PART NUMBER IS UNKNOWN (MIARS)

TIME: _____

INTRODUCTION

The following lab session requires that you look up information using the microfilm Illustrated Parts Breakdown. In order to simplify this procedure we have given you step by step instructions to find the necessary information.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.4.

Supported entirely by this lesson topic:

1.4.1 through 1.4.7.

REFERENCES:

1. Illustrated Parts Breakdown, Navy Models A-4E and A-4F Aircraft, NA01-40AVC-4-1, Volume I, General Information and Numerical Index.
2. Illustrated Parts Breakdown, Navy Models A-4E, and A-4F Aircraft, NA01-40AVC-4-6, Volume VI, Ejection System, Air Conditioning System, and Cockpit Equipment.
3. Illustrated Parts Breakdown, Navy Models A-4E and A-4F, Aircraft, NA01-40AVC-4-9, Volume IX, Special Support Equipment.
4. Aviation Structural Mechanic E 3&2, NAVEDTRA 10309-D, Chapter 1 Pages 1-21 through 1-27.

EQUIPMENT AND MATERIAL:

1. MIARS Reader.
2. MIARS microfilm A4.14 and A4.15.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

When the part number is unknown:

1. Go to the appropriate MIARS microfilm Illustrated Parts Breakdown for the specific type aircraft.
2. Go to the Major System Volume where the part is located.
3. Go to the Table of Contents of the Major System Volume, find the list of illustrations and select the figure which shows the major part which you are looking for.
4. Select the page number for the major part.
5. Go to Section II Group Assemblies Parts List of the Major System Volume. (A figure page which gives a breakdown of the assembly and identifies each part with a index number.)
6. Locate the description page and check figure and index number.
7. Locate part number.
8. Breakdown usable on code in Section One, Introduction of the Major System Volume VIII Airframes, to determine BuNo. aircraft the part will fit.

1. Locate all available information on the cockpit enclosure seal assembly located on the hinged enclosure assembly.

Volume _____ Page Number _____ Figure Number _____

Index Number _____ Part Number _____ SM&R code _____

Nomenclature _____

Units per assembly (U/A) _____ Usable-on Code _____

_____. Vendor (manufacturer) Code _____

Next higher assembly (NHA) _____.

1. Locate all available information on the liquid oxygen converter check valve assembly.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

2. Locate all available information on aircraft cabin air pressure regulator assembly located on the cockpit pressurization system valve installation for a A-4F.

Volume _____ Page Number _____ Figure Number _____
Index Number _____ Part Number _____ SM&R code _____
Nomenclature _____
Units per assembly (U/A) _____ Usable-on Code _____
_____. Vendor (manufacturer) Code _____
Next higher assembly (NHA) _____.

3. What is the part number for a gas cylinder pressure relief safety device assy. for the cockpit enclosure bungee assembly?

4. What is the usable-on-code for an eight day clock assembly?

INSTRUCTOR'S INITIALS _____

ASSIGNMENT SHEET 2.5.1A

LOCATING INFORMATION FOR THE REPLACEMENT OF AIRCRAFT COMPONENTS

INTRODUCTION

The high-speed, high-performance aircraft in the Navy today have many units that are not repairable and must be replaced. If these units become damaged or inoperative, the necessary information for ordering replacements can be found in the Illustrated Parts Breakdown (IPB). Using this assignment will enable you to understand the IPB.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.2, 1.4.

Supported entirely by this lesson topic:

1.4.1 through 1.4.7.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.5.1N.
2. Read pages 1-21 through 1-27 in the Aviation Structural Mechanic E 3&2 Manual. NAVEDTRA 10309-D.
3. Using the Notetaking Sheet 2.5.1N and the reading assignments answer the following study guide.

STUDY QUESTIONS

1. What is the purpose for the Illustrated Parts Breakdown?
2. In what section of the Illustrated Parts Breakdown would you find instructions on how to use this manual?
3. What information can be found in the table of contents of the Illustrated Parts Breakdown?

4. What information can be found on the description and nomenclature page?
5. What does it mean if there is no usable-on code listed for a part or component?
6. What is the purpose of the material control work center at a organizational level?
7. What is the procedure for the procurement of aviation materials?
8. What information must the worker provide from the IPB in order to receive the proper part?
9. What are the requirements for a component to be added to the rotatable pool?
10. What is the definition of pre-expended material?
11. Who is responsible for establishing the procedures for controlling and directing cannibalization?

NOTETAKING SHEET 2.6.1N

INTERPRETATION OF AIRCRAFT SCHEMATIC DIAGRAMS

REFERENCES:

1. Fluid Power, NAVPERS 16193-B, 1970 Edition, Chapter 4, Basic Systems and Circuit Diagrams.
2. Military Standard, Mechanical Symbols for Aeronautical, Aerospacecraft, and Spacecraft Use, Part 2, MIL STD-17B-2.
3. Blueprint Reading and Sketching, NAVEDTRA 10077-E, Chapter 7, 1977 Edition.

NOTETAKING OUTLINE:

- A. Definition of Aircraft Diagrams: Diagrams are defined as a _____ representation of an assembly or system indicating the various parts and expressing the methods and principles of operation.
- B. There are several types. We will be concerned with two.
 1. Schematic diagrams: Enables the maintenance man to trace the flow of fluid, _____.
 - a. This diagram does not necessarily show physical location of component with the system.
 - b. This type of diagram is used mainly in troubleshooting systems. (See Figure 2.6-1)

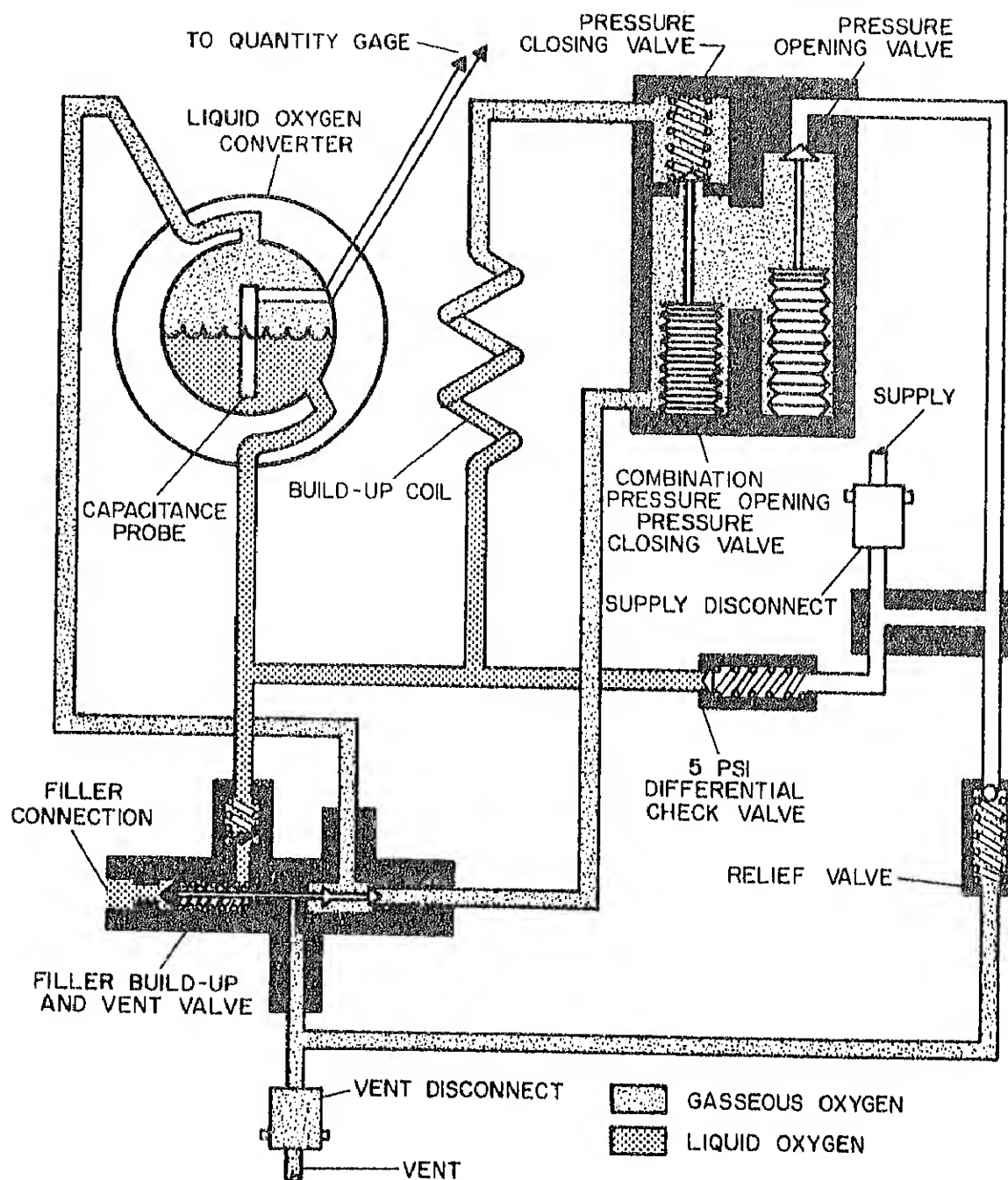


FIGURE 2.6-1.--Liquid Oxygen Converter (Filling) Schematic Diagram.

2. Installation diagram: shows general location, function and appearance of parts and assemblies (See Figure 2.6-2)

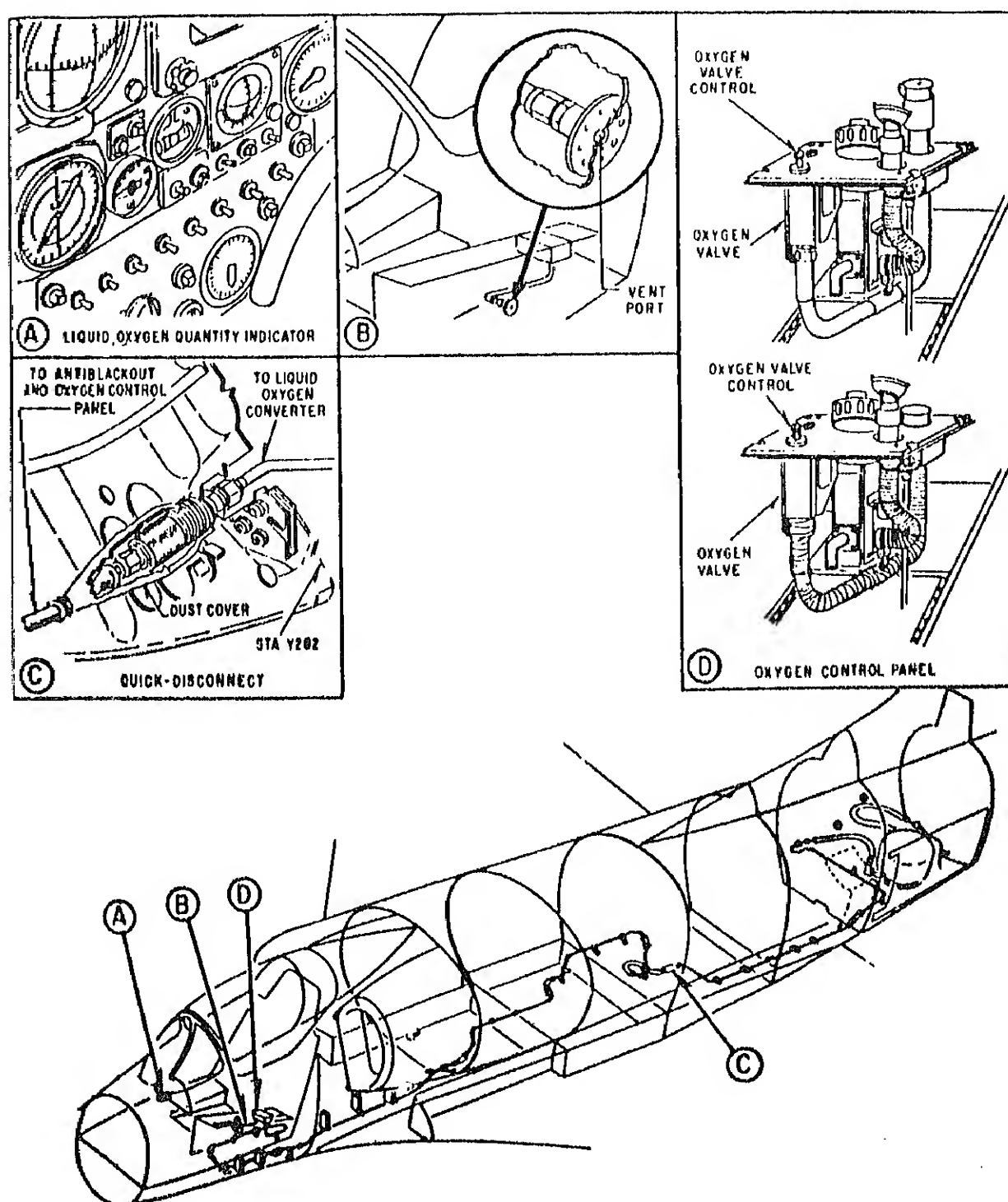


FIGURE 2.6-2.--Installation Diagram.

- a. Sometimes referred to as _____.
- b. This type of diagram is used extensively throughout all aircraft maintenance instruction manuals.
- C. Symbols: Are used to represent system components on aircraft diagrams. They also save space, allowing for a more compact diagram.

1. Identification

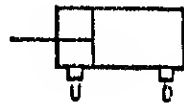
a. _____



b. _____



c. _____



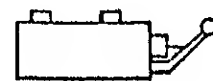
d. _____



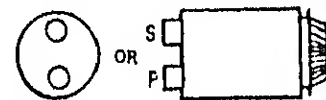
e. _____



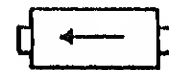
f. _____



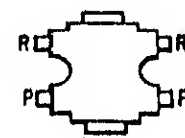
g. _____



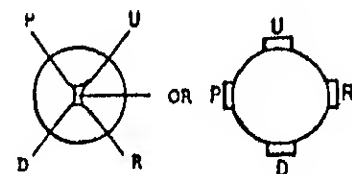
h. _____



i. _____



j. _____



2. Legends: are used to explain or define special symbols or marks used on a particular schematic.
- D. Location of diagrams--schematic and installation diagrams are located in the MIM's covering specific aircraft systems. Both types of diagrams are listed in the illustrations section of the table of contents in the MIM.
- E. Schematic diagram reading
1. It is of _____ to first understand the legend of the schematic you intend to use.
 2. To trace the flow of air or fluid, start at the source of power, proceed through the system components, keeping in mind their function in relation to system operation.

JOB SHEET 2.6.1J

INTERPRETATION OF AIRCRAFT SCHEMATIC DIAGRAMS

TIME: _____

INTRODUCTION

One of the most challenging endeavors in aviation maintenance will be troubleshooting the complex systems of naval aircraft. To troubleshoot these systems requires a knowledge of aircraft systems through the use of a schematic diagram. Diagrams are the maintenance-man's primary tool. With diagrams he can eliminate trial and error methods, and make every step count.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVE

Supported partially by this lesson topic:

1.5.

Supported entirely by this lesson topic:

1.5.24 through 1.5.28.

REFERENCES:

1. Fluid Power, NAVPERS 16193-B, 1970 Edition, Chapter 4, Basic Systems and Circuit Diagrams.
2. Military Standard, Mechanical Symbols for Aeronautical, Aerospacecraft, and Spacecraft Use, Part 2, Mil STD-17B-2.
3. Blueprint Reading and Sketching, NAVEDTRA 10077-E, Chapter 7.

EQUIPMENT AND MATERIALS:

1. Pencils.
2. Handout: Job Sheet 2.6.1J.

JOB STEPS: Using the diagrams on the following pages, answer the questions. Each question will have a four point value.

- | | |
|--|-------------|
| 1. Schematic Diagrams | Date: _____ |
| Figure 1 Instructor's Initials: | _____ |
| Figure 2 Instructor's Initials: | _____ |
| Figure 3 Instructor's Initials: | _____ |
| Figure 4 Instructor's Initials: | _____ |
| 2. Installation diagram | Date: _____ |
| Figure 5 Instructor's Initials: | _____ |
| 3. Symbol Identification | Date: _____ |
| Figure 6 Instructor's Initials: | _____ |

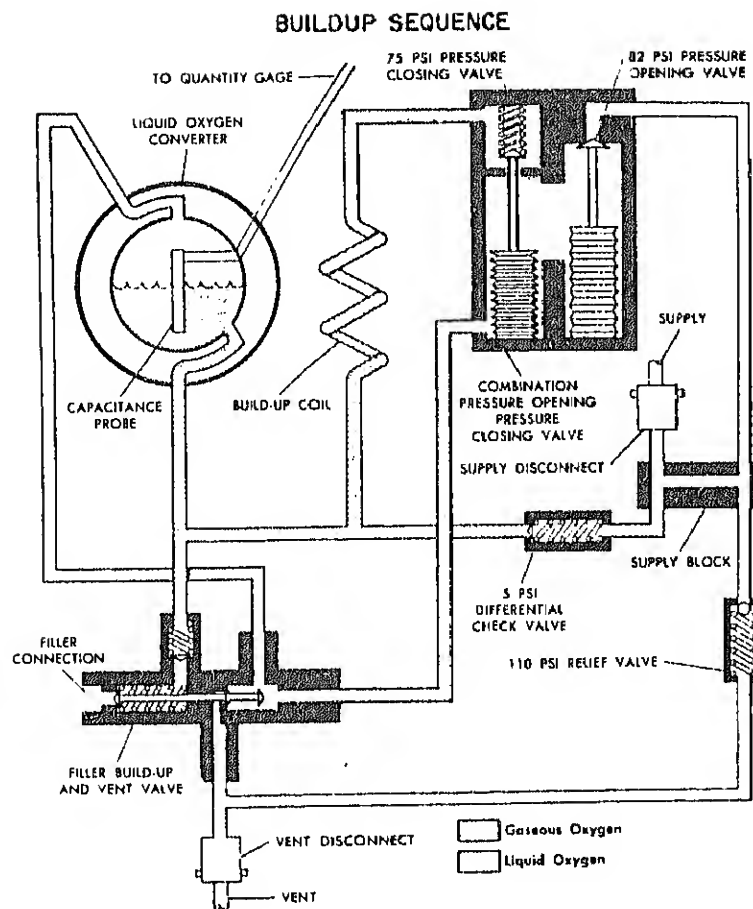


FIGURE 1.--Schematic Diagram - Liquid Oxygen Converter (Buildup Cycle).

Using Figure 1, answer the following questions:

1. What component is located inside the liquid oxygen converter?
2. What components does liquid oxygen pass through during the filling of the liquid oxygen converter?
3. What component is found between the filler, buildup, and vent valve and the supply disconnect?
4. What valve works at a pressure of 82 psi?
5. What is the pressure of the relief valve?

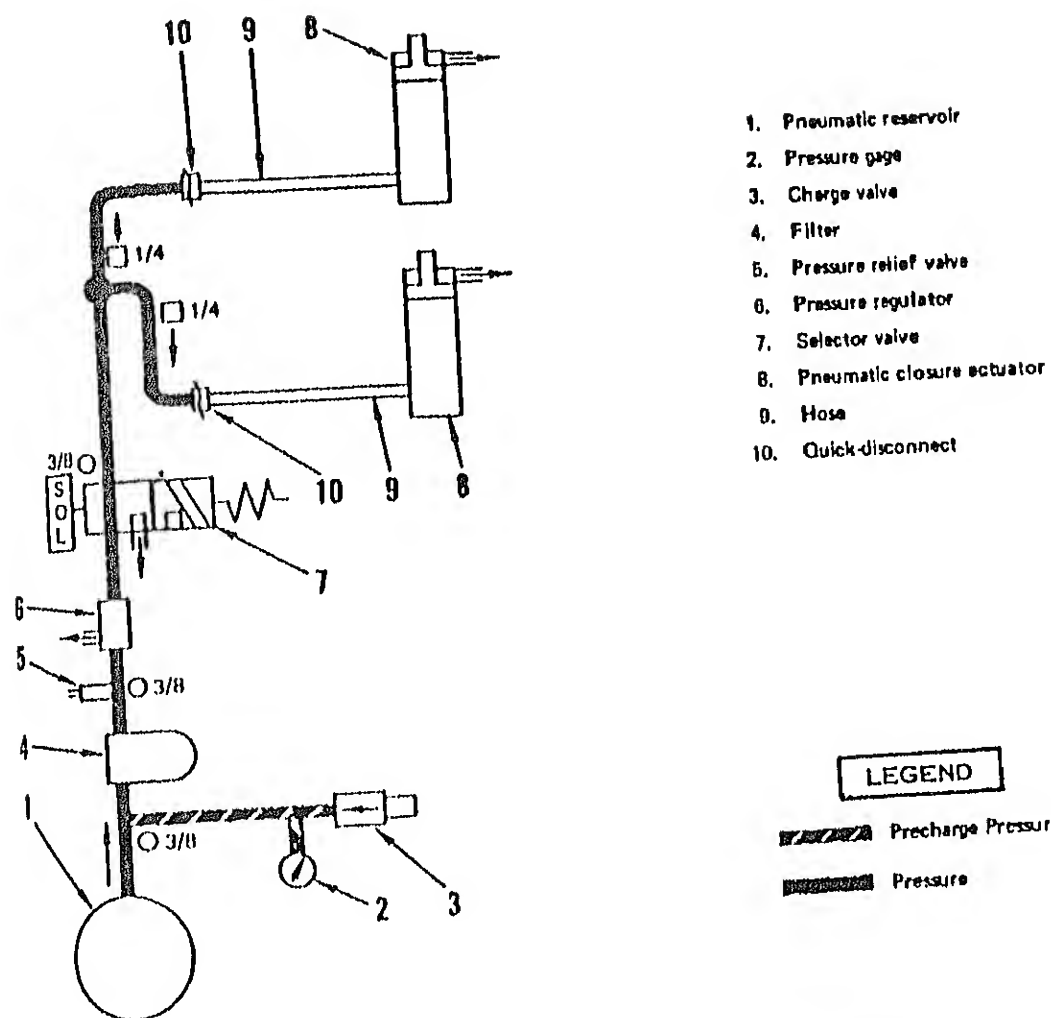


FIGURE 2.--Pneumatic System Schematic Diagram.

Using Figure 2, answer the following questions:

1. How many components are listed in this system?
2. What component provides the pressure to operate this system?
3. What is item 8's nomenclature?
4. Through which components does precharge pressure flow?
5. What component is located between the selector valve and the pressure relief valve?

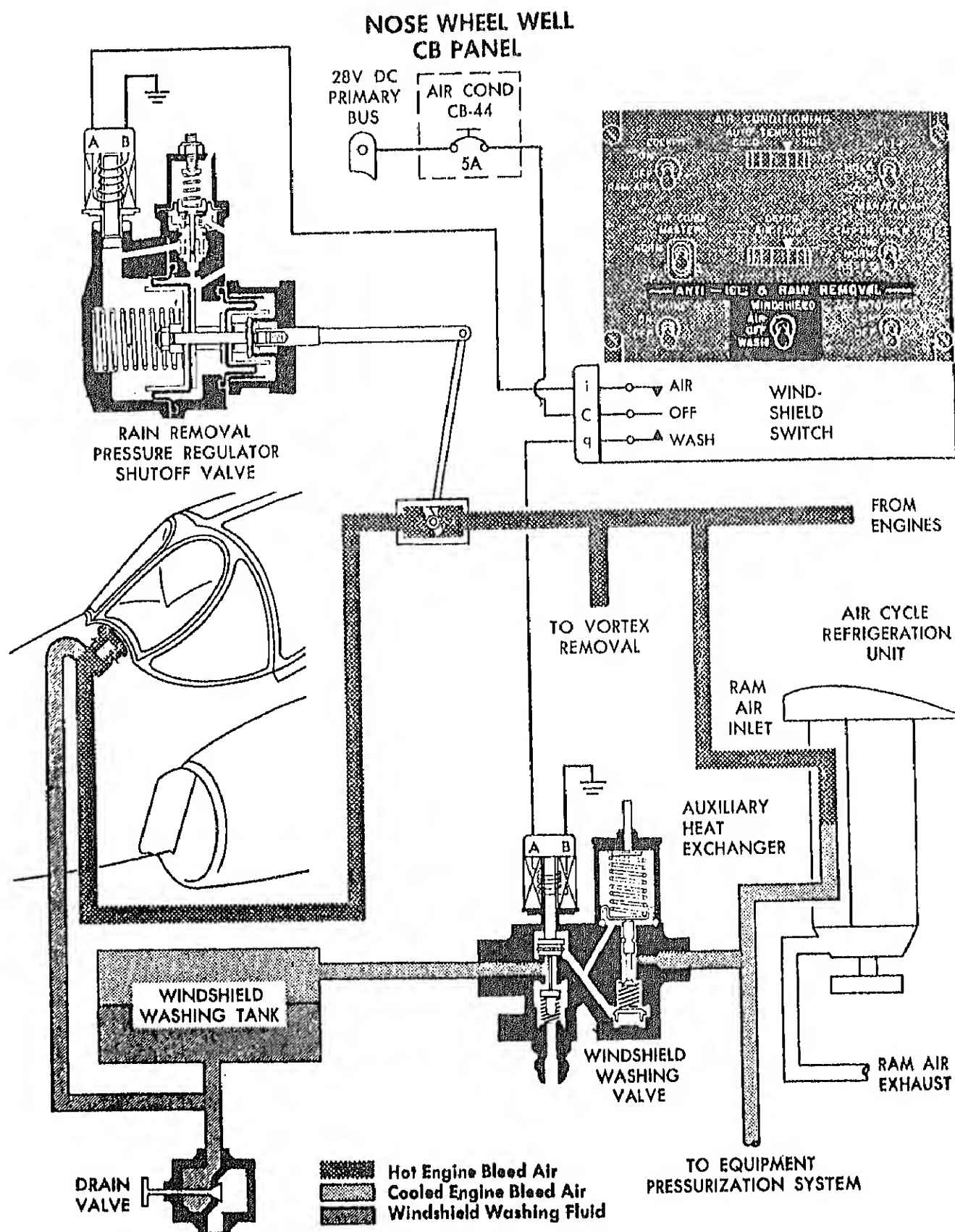


FIGURE 3.--Windshield Washing and Rain Removal System Schematic Diagram.

Using Figure 3, answer the following questions.

1. Where does the power to run the rain removal pressure regulator shutoff valve come from?
2. Where does the hot engine bleed air travel during system operation?
3. How many positions are on the windshield switch and what are they?
4. How many components are in the windshield washing system?
5. Where is air cond CB-44 located?

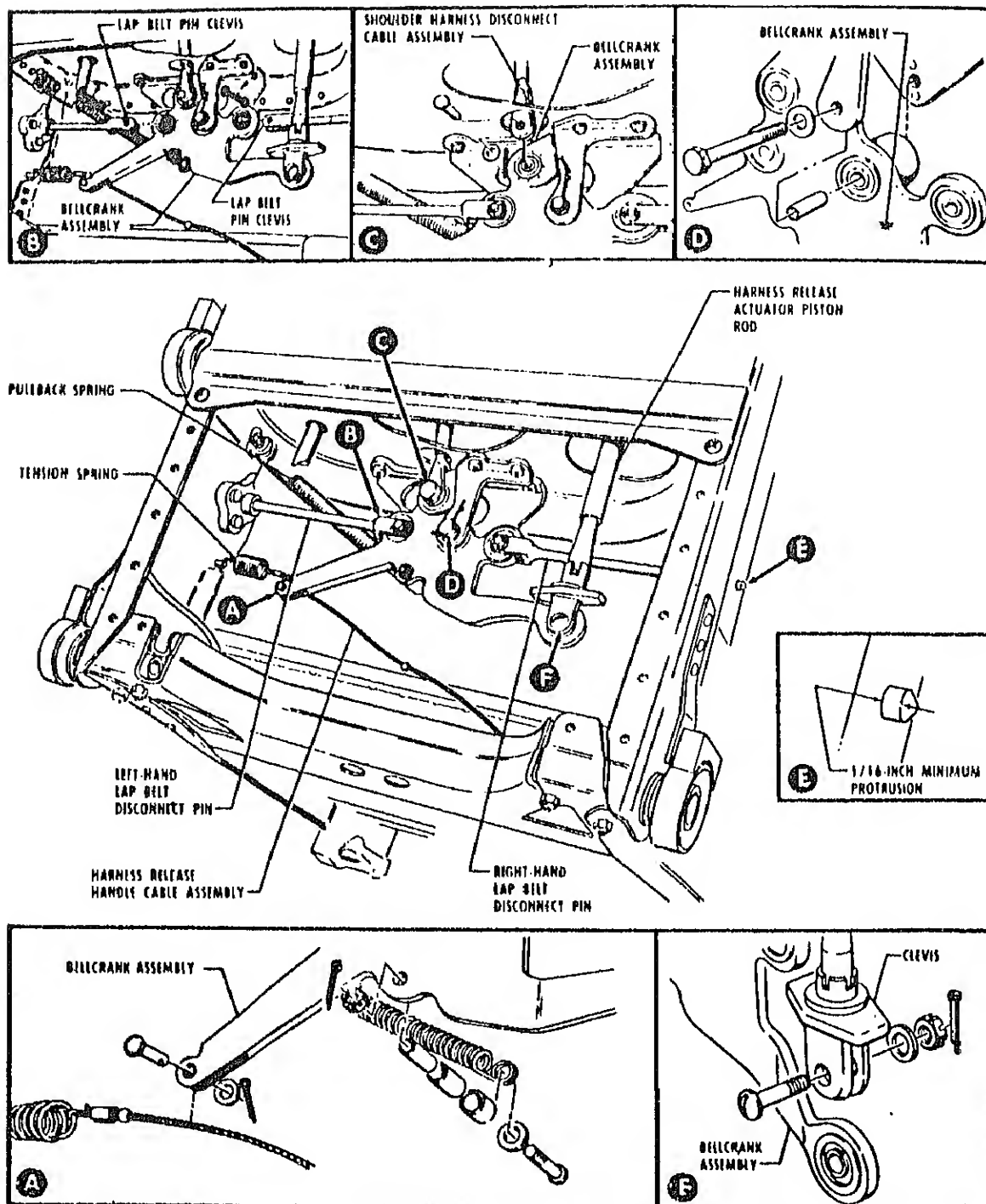


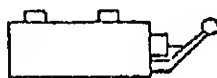
FIGURE 4.--Harness Release Bellcrank Assembly Installation Diagram.

Using Figure 4, answer the following questions.

1. What component does this installation diagram show?
2. What is the minimum protrusion shown in detail E?
3. How are the lap belt disconnect pins connected to the harness release bellcrank assembly?
4. What are the proper nomenclature of the springs located in this schematic?
5. What components are showing in Detail C?

Using figure 5, match the following symbols with their proper nomenclature.

1.



- _____ a. Air bottle, emergency
 _____ b. Valve, check, automatic
 _____ c. Pump, hand
 _____ d. Gage, pressure

2.

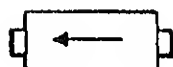


- _____ e. Filter or strainer

3.



4.



5.



FIGURE 5.--Aeronautical Mechanical Symbols.

ASSIGNMENT SHEET 2.6.1A

INTERPRETATION OF AIRCRAFT SCHEMATIC DIAGRAMS

INTRODUCTION

The schematic diagram is a fundamental tool of the modern aviation mechanic. The ability to read and interpret schematic diagrams is not only desirable but mandatory. Inaccurate interpretation of schematic diagrams, especially in the safety equipment field, is very likely to have fatal results. Not only will correct usage of schematics save lives, it will save many hours of labor and many dollars in equipment cost when performing maintenance and repair on aircraft.

TERMINAL OBJECTIVE

Supported partially by lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by lesson topic:

1.5.

Supported entirely by lesson topic:

1.5.24 through 1.5.28.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.6.1N.
2. Using Notetaking Sheet 2.6.1N, answer the following study questions.

STUDY QUESTIONS

1. What is the definition of aircraft diagrams?
2. What is the purpose of schematic diagrams?
3. What type diagram is sometimes referred to as a pictorial diagram?
4. What is the symbol(s) for the following components?
 - a. Pressure gage
 - b. Automatic check valve
 - c. Emergency air bottle
 - d. Selector valve
 - e. Filter
5. Where should you start on a schematic diagram to trace the flow of air or fluid?

NOTETAKING SHEET 2.7.1N

VIDS/MAF, SAF, SCIR

REFERENCES:

1. A-4 Work Unit Code Manual, NAVAIR 01-40AV-8.
2. The Naval Aviation Maintenance Program (NAMP),
OPNAVINST 4790.2 (latest rev.).
3. Aviation Structural Mechanical E 3 & 2, NAVEDTRA 10309
(latest rev.).

NOTETAKING OUTLINE:

A. VIDS/MAF, OPNAV 4790/60

1. Purpose: The VIDS/MAF is a _____ part form designed for maintenance personnel to document hours, parts, discrepancies and corrective actions expended on an aircraft.

2. Documentation Procedures

- a. The _____ used for documenting the VIDS/MAF will be found in your work unit code manuals and in the appendices of the 4790.2 (latest rev.) Naval Aviation Maintenance Program. (See instructor hand out of WUC manual).
- b. A step-by-step explanation required on a VIDS/MAF is presented in the following paragraphs. Follow your Instructor through each block making note of who is responsible for completing the blocks.

- _____
- _____
- _____

FIGURE 2.7-1--Top Section of VIDS/MAF.

- 126

(3) Accumulated Work Hours Block

- (a) Name/shift -- Enter the name or shift of personnel performing the work. (See figure 2.7-1).
- (b) Date -- Enter Julian date on which the action takes place (refer to figure 2.7-3 as directed by Instructor and record appropriate Julian date in block on figure 2.7-1).
- (c) Man-hours -- Enter the number of man-hours expended to _____ the discrepancy (in hours and tenths). (Refer to figure 2.7-1).
- (c) Tool container inventory verification will be entered in this block on the same line corresponding to the workers listed in the "Accumulated work hours" block. (See figure 2.7-1).

(d) _____

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	061	092	122	153	183	214	245	275	306	336	1
2	002	033	062	093	123	154	184	215	246	276	307	337	2
3	003	034	063	094	124	155	185	216	247	277	308	338	3
4	004	035	064	095	125	156	186	217	248	278	309	339	4
5	005	036	065	096	126	157	187	218	249	279	310	340	5
6	006	037	066	097	127	158	188	219	250	280	311	341	6
7	007	038	067	098	128	159	189	220	251	281	312	342	7
8	008	039	068	099	129	160	190	221	252	282	313	343	8
9	009	040	069	100	130	161	191	222	253	283	314	344	9
10	010	041	070	101	131	162	192	223	254	284	315	345	10
11	011	042	071	102	132	163	193	224	255	285	316	346	11
12	012	043	072	103	133	164	194	225	256	286	317	347	12
13	013	044	073	104	134	165	195	226	257	287	318	348	13
14	014	045	074	105	135	166	196	227	258	288	319	349	14
15	015	046	075	106	136	167	197	228	259	289	320	350	15
16	016	047	076	107	137	168	198	229	260	290	321	351	16
17	017	048	077	108	138	169	199	230	261	291	322	352	17
18	018	049	078	109	139	170	200	231	262	292	323	353	18
19	019	050	079	110	140	171	201	232	263	293	324	354	19
20	020	051	080	111	141	172	202	233	264	294	325	355	20
21	021	052	081	112	142	173	203	234	265	295	326	356	21
22	022	053	082	113	143	174	204	235	266	296	327	357	22
23	023	054	083	114	144	175	205	236	267	297	328	358	23
24	024	055	084	115	145	176	206	237	268	298	329	359	24
25	025	056	085	116	146	177	207	238	269	299	330	360	25
26	026	057	086	117	147	178	208	239	270	300	331	361	26
27	027	058	087	118	148	179	209	240	271	301	332	362	27
28	028	059	088	119	149	180	210	241	272	302	333	363	28
29	029	060	089	120	150	181	211	242	273	303	334	364	29
30	030		090	121	151	182	212	243	274	304	335	365	30
31	031		091		152		213	244		305		366	31

FIGURE 2.7-2 -- Julian Date Calendar (leap year).

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	060	091	121	152	182	213	244	274	305	335	1
2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	078	109	139	170	200	231	262	292	323	353	19
20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		090		151		212	243		304		365	31

FIGURE 2.7-3 -- Julian Date Calendar (Perpetual).

<u>Minutes</u>	<u>Tenths</u>
1 - 2	0
3 - 8	1
9 - 14	2
15 - 20	3
21 - 26	4
27 - 33	5
34 - 39	6
40 - 45	7
46 - 51	8
52 - 57	9
58 - 60	1 Hour

FIGURE 2.7-4 -- Tenths of Hour Key.

(d) Elapsed maintenance time -- Enter the elapsed maintenance time that was expended to correct the _____ (in hours and tenths).

(4) Accumulated Awaiting Maintenance Block

- (a) This block will be used to record awaiting maintenance hours accumulated against a SCIR (Subsystem Capability and Impact Reporting) related discrepancy. (See Figure 2.7-1).
- (b) Record the _____ date and time of the awaiting maintenance period with the awaiting maintenance _____ code found in the appendix R of the 4790.2 (latest rev.). (Refer to Figure 2.7-5).

APPENDIX R

AWAITING MAINTENANCE REASON CODES

CODE EXPLANATION

- | | |
|--|---|
| <p>1. Support Equipment. Unavailable or inadequate support equipment.</p> <p>2. Hangar/Hangar Deck Spaces/Facilities. Lack of adequate maintenance area or utility services, such as electricity or air pressure.</p> <p>3. Backlog. Work load in excess of work center capability.</p> <p>4. Off-shift Hours. Maintenance requirement exists beyond normal working hours. This applies only to activities which do not normally schedule work assignments during the reported period, such as 0001 to 0800, or during weekend or holiday periods in which personnel are not normally working.</p> <p>5. Other. Performance of maintenance precluded by weather, operational conditions, general drill, training, ceremonies, open house, shipboard/shore station imposed restrictions, etc.</p> | <p>6. Awaiting AIMD Maintenance. Awaiting the return of an engine or component from the AIMD during a Not Mission Capable Maintenance (NMCM) period. This code would be annotated when no further work could be accomplished without the engine or component in process in AIMD. Subsystem Capability Impact Report (SCIR) will reflect the control JCN for the airframe and the WUC of the delinquent item.</p> <p>7. Flight Operations/Operational Utilization. Weapon systems or equipment unavailable for maintenance due to flight operations or equivalent.</p> <p>8. Awaiting Other Shops or Maintenance Actions. This code will be documented when no further maintenance can be performed due to other shops or maintenance actions, e.g., Work Center 120 unable to complete functional check on flight controls due to Work Center 110 having engine removed. This code should not be confused with Reason Code 3 (Backlog).</p> |
|--|---|

FIGURE 2.7-5 -- Awaiting Maintenance Reason Code.

- (c) At the end of the awaiting maintenance period, record the time and date, and enter the total amount of awaiting maintenance hours in the hours block.
- (5) H-Z Failed/Required Material Block
 - (a) Used to record a failed part _____ or awaiting parts situations (refer to Figure 2.7-6).

79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MEGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	42 PRC	43 PRI	45 DATE OHD	49 REQ NO	53 DATE REC
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>											

FOLD

422 WORK UNIT CODE		A29 ACTION ORG	A32 TRANS	A34 MAINTAL	A35 ACT INTRN	A36 MAL CODE	A39 TECHN/P	A41 MAN HOURS	A45 ELAPSED M/T	409 INTERIM	TECHNICAL DIRECTIVE IDENTIFICATION					
										<input type="checkbox"/>	109 CODE	111 BASIC NO.	115 RV	116 AM	117 PART	118 ET
A48 TYPE EQUIP	A52 BU/SER NUMBER		A58 DISCO	A59 T/M	A60 POSIT	A62 FID	A65 DATE TYPE/SEN	A66 ALTH	121 TGTCH			122 PERM CODE				

FIGURE 2.7-6 -- Middle Section of VIDS/MAF.

(b) Block 79, Index

1. Enter letters H through Z to various _____ parts for the Data Services facility.
2. Used _____ H will represent the _____ failed part and Z will represent the _____ failed part against a maintenance action.
3. Block 08 failed part. Enter an (x) mark to denote a failed part.
4. Block 09 awaiting parts.

_____.
5. Block 10 action taken. Enter the one character code which describes the action taken against the _____.
6. Block 11 malfunction code. Enter the malfunction code which best describes the malfunction of the failed part.

7. Block 14 manufacturer. Enter the manufacturers code of the _____
part or part _____.
- _____
- _____
- _____.
8. Block 19 part number. Enter the part number of the failed part or part required.
- _____
- _____
- _____.
9. Block 34 reference symbol.
- _____
- _____.
10. Block 41 quantity. Enter the quantity of the failed part or required material.
11. Block 43 priority. Enter the MILSTRIP priority assigned to the material requisition.
- _____
- _____
- _____.
12. Block 45 date ordered. Enter the Julian date the material was requisitioned.
13. Block 49 requisition number. Enter the MILSTRIP requisition number of the material required to complete the maintenance action.

14. Block 53 date received. Enter the Julian date the requisitioned material was received.

(6) Block A22 Work Unit Code (WUC)

- (a) Enter the WUC that identifies the _____, specific engine, or _____ on which work is being performed (See Figure 2.7-6).

- (b) In cases when removed repairable parts do not have a WUC assigned use the _____ or _____ character not otherwise coded (NOC) code provided by the system.

(7) Block A29 action organization. Enter the organizational code of the organization performing the work. (See Figure 2.7-6).

(8) Block A32 transaction code (Trans)

- (a) Enter the transaction code which describes the type of action _____ on the document.

- (b) Transaction codes are listed in the appendix T of the 4790.2 (latest rev.). (Refer to Figure 2.4-7).

(9) Block A34 maintenance level (Maint/L). Enter the _____ through _____ that describes maintenance level where work is being performed.

(10) Block A35 action taken (Act Taken). Enter the code that describes the action taken to correct the discrepancy.

- (11) Block A36 malfunction description code (Mal code). Enter the malfunction description code that best describes the trouble or cause of trouble in the _____ identified in the WUC manual.
- (12) Block A39 items processed (Items/P). Enter the _____ the action indicated in block A35 was taken against the item described in the _____.
- (13) Block A41 man-hours. Enter the number of man-hours expended to _____ the discrepancy (in hours and tenths).
- (14) Block A45 elapsed maintenance time (Elapsed m/t). Enter the number of _____ involved in making the repair (in hours and tenths).
- _____
- _____
- _____
- _____.
- (15) Technical Directive Identification Block F08 through F19. Will be used to record the 12 character code that identifies the specific technical directive incorporated in the type equipment identified in block A48. (See VIDS/MAF wall chart and Figure 2.7-6 as directed by Instructor).
- (16) Block A48 type equipment (Type Equip). Enter the type equipment code that describes the end item on which work is being performed. (See Figure 2.7-6).
- _____
- _____
- _____.

CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
	THE TRANSACTION CODES LISTED BELOW ARE TO BE ENTERED IN BLOCK 432 OF THE VIDS/MAF. TRANSACTION CODES DE- NOTE THE TYPE OF DATA BEING REPORTED. CODES 00, 02, AND 03 PARTICULARLY ARE FOR REPORTING CUSTODIANS.				
TRANS CODE	TYPE TRANSACTION				
00.	IS USED TO REPORT AN INVENTORY GAIN.	17.	INSTALLATION OF A NON-DEFECTIVE COMPONENT/ITEM (EXCLUDING ENGINE COMPONENTS/ITEMS AND CANNIBALIZATION). IN THE CASE OF A NON-SERIALIZED COMPONENT/ITEM, BLOCK 413 OF THE VIDS/MAF MAY BE LEFT BLANK. (SEE NOTE.)	24.	THIS TRANSACTION CODE WILL BE USED WHEN A REPAIRABLE ENGINE COMPONENT/ITEM IS REMOVED FOR PROCESSING AT AN INTERMEDIATE OR DEPOT LEVEL MAINTENANCE ACTIVITY. THIS CODE IS USED WHEN ONLY THE REMOVAL MUST BE DOCUMENTED AND A REPLACEMENT IS NOT REQUIRED. SEE NOTE.
02.	IS USED TO REPORT A CHANGE IN THE READINESS REPORTABLE STATUS (RPS) OF AN EQUIPMENT. E.G., IN/OUT REPORTING.	18.	A. THE REMOVAL AND REPLACEMENT OF NON-DEFECTIVE ENGINES AND COMPONENTS/ITEMS (EXCLUDING ENGINE COMPONENTS/ITEMS) TO ACCOMPLISH A CANNIBALIZATION ACTION. (ACTION TAKEN CODE T ONLY.)	25.	REMOVAL AND REPLACEMENT OF A DEFECTIVE OR SUSPECTED DEFECTIVE REPAIRABLE COMPONENT/ITEM FROM AN ENGINE. THE REMOVED COMPONENT/ITEM TO BE PROCESSED AT AN INTERMEDIATE OR DEPOT LEVEL MAINTENANCE ACTIVITY. SEE NOTE.
03.	IS USED TO REPORT AN EQUIPMENT LOSS.	19.	A. THE REMOVAL AND REPLACEMENT OF NON-DEFECTIVE ENGINE COMPONENTS/ITEMS TO ACCOMPLISH A CANNIBALIZATION. (ACTION TAKEN CODE T ONLY.)	30.	THIS TRANSACTION CODE IS USED TO DOCUMENT COMPONENTS/ITEMS PROCESSED THROUGH THE INTERMEDIATE LEVEL MAINTENANCE ACTIVITY FOR CHECK, TEST, AND SERVICE. ANY COMPONENT/ITEM FAILING CHECK, TEST, SERVICE SHALL BE DOCUMENTED IN ACCORDANCE WITH PARAGRAPH 64050.(13).
11.	A. ON-EQUIPMENT WORK NOT INVOLVING REMOVAL OF DEFECTIVE OR SUSPECTED DEFECTIVE COMPONENTS/ITEMS.	20.	B. THE REMOVAL AND REPLACEMENT OF THOSE CONSUMABLE COMPONENTS/ITEMS (EXCLUDING ENGINE COMPONENTS/ITEMS) SUBJECT TO A SCHEDULED REMOVAL INTERVAL OR ITEMS OF SUPPLY SIGNIFICANCE. E.G., PRECIOUS METAL CONTENT. DOCUMENT THE REMOVAL COMPONENT/ITEM IN BLOCKS 608 THROUGH 642. DOCUMENT THE REPLACEMENT COMPONENT/ITEM IN BLOCKS 609 THROUGH 638. ACTION TAKEN CODE R WILL BE DOCUMENTED IN BLOCK 435. BLOCKS 79 (INDEX) WILL REMAIN BLANK.	31.	WORK PERFORMED ON A REMOVED REPAIRABLE COMPONENT/ITEM WITH NO FAILED PARTS. AWAITING PARTS OR ENGINE IDENTIFICATION DOCUMENTED IN THE FAILED/REQUIRED MATERIAL BLOCKS. THIS CODE WILL BE USED ON ENGINE DOCUMENTS ONLY WHEN THE ENGINE IS NOT SPECIFICALLY IDENTIFIED TO A PARTICULAR AIRCRAFT. E.G., JRPX. (SEE TRANSACTION CODE 11 FOR SUPPORTING ENGINE DOCUMENTS.) THIS ACTION IS NORMALLY PERFORMED AT THE AIMD/IWA.
12.	A. ON-EQUIPMENT WORK (INCLUDING ENGINES), INVOLVING NONREPAIRABLE COMPONENTS/ITEMS, DOCUMENTED AS FAILED PARTS.	21.	B. THE REMOVAL AND REPLACEMENT OF THOSE CONSUMABLE ENGINE COMPONENTS/ITEMS SUBJECT TO A SCHEDULED REMOVAL INTERVAL OR ITEMS OF A SUPPLY SIGNIFICANCE. E.G., PRECIOUS METAL CONTENT. DOCUMENT THE REMOVAL COMPONENT/ITEM IN BLOCKS 608 THROUGH 642. DOCUMENT THE REPLACEMENT COMPONENT/ITEM IN BLOCKS 609 THROUGH 638. ACTION TAKEN CODE R WILL BE DOCUMENTED IN BLOCK 435. THE ENGINE FROM WHICH THE COMPONENT/ITEM WAS REMOVED AND REPLACED WILL BE DOCUMENTED IN THE (H-2) FAILED/REQUIRED MATERIAL BLOCKS 79, 10, 11, 19, AND 41.	32.	WORK PERFORMED ON A REMOVED REPAIRABLE COMPONENT/ITEM (INCLUDING ENGINES) WITH FAILED PARTS. AWAITING PARTS, CANNIBALIZATION ACTIONS, OR ENGINE IDENTIFICATION DOCUMENTED IN THE FAILED/REQUIRED MATERIAL BLOCKS. THIS ACTION NORMALLY PERFORMED AT THE AIMD.
14.	REMOVAL OF A NON-DEFECTIVE COMPONENT/ITEM (EXCLUDING CANNIBALIZATION). SEE TRANSACTION CODE 19). FROM AN ENGINE. TO BE PROCESSED AT THE ORGANIZATIONAL LEVEL MAINTENANCE ACTIVITY.	23.	REMOVAL AND REPLACEMENT OF A DEFECTIVE OR SUSPECTED DEFECTIVE REPAIRABLE COMPONENT/ITEM FROM AN END ITEM (EXCLUDING ENGINE COMPONENTS/ITEMS). ADDITIONALLY, THIS TRANSACTION CODE WILL BE USED FOR THE REMOVAL AND REPLACEMENT OF A COMPLETE ENGINE ASSEMBLY FOR A DEFECT, SUSPECTED DEFECT, OR SCHEDULED MAINTENANCE REQUIREMENT. THE REMOVED COMPONENT/ITEM TO BE	39.	CLOSE OUT FOR MAN-HOURS OR AWAITING PARTS (AMP) AT AN INTERMEDIATE LEVEL MAINTENANCE ACTIVITY.
15.	INSTALLATION OF A NON-DEFECTIVE COMPONENT/ITEM (EXCLUDING CANNIBALIZATION). SEE TRANSACTION CODE 19). ON AN ENGINE TO BE PROCESSED AT AN ORGANIZATIONAL LEVEL MAINTENANCE ACTIVITY. IN THE CASE OF A NON-SERIALIZED COMPONENT/ITEM, BLOCK 413 OF THE VIDS/MAF MAY BE LEFT BLANK. (SEE NOTE.)	24.	THIS TRANSACTION CODE WILL BE USED WHEN A REPAIRABLE COMPONENT/ITEM IS REMOVED (EXCLUDING ENGINES/ENGINE COMPONENTS) FOR PROCESSING AT AN INTERMEDIATE OR DEPOT LEVEL MAINTENANCE ACTIVITY. THIS CODE IS USED WHEN ONLY THE REMOVAL MUST BE DOCUMENTED AND A REPLACEMENT IS NOT REQUIRED. SEE TRANSACTION CODE 24 FOR ENGINE/ENGINE COMPONENTS. SEE NOTE.	41.	TECHNICAL DIRECTIVE COMPLIANCE (TDC) WITH NO PART NUMBER CHANGE.
16.	REMOVAL OF A NON-DEFECTIVE COMPONENT/ITEM, EXCLUDING ENGINE COMPONENTS/ITEMS AND CANNIBALIZATION. (SEE TRANSACTION CODE 16) TO BE PROCESSED AT AN ORGANIZATIONAL LEVEL MAINTENANCE ACTIVITY. IN THE CASE OF A NON-SERIALIZED COMPONENT/ITEM, BLOCK 413 OF THE VIDS/MAF MAY BE LEFT BLANK. (SEE NOTE.)	25.	REMOVAL AND REPLACEMENT OF A DEFECTIVE OR SUSPECTED DEFECTIVE REPAIRABLE COMPONENT/ITEM FROM AN END ITEM (EXCLUDING ENGINE COMPONENTS/ITEMS). ADDITIONALLY, THIS TRANSACTION CODE WILL BE USED FOR THE REMOVAL AND REPLACEMENT OF A COMPLETE ENGINE ASSEMBLY FOR A DEFECT, SUSPECTED DEFECT, OR SCHEDULED MAINTENANCE REQUIREMENT. THE REMOVED COMPONENT/ITEM TO BE	47.	TECHNICAL DIRECTIVE COMPLIANCE (TDC) WITH A PART NUMBER CHANGE. THIS ALSO APPLIES TO COMPONENTS/ITEMS THAT REQUIRE BLOCKS 2 AND 6 INFORMATION WITH NO PART NUMBER CHANGE.
		26.	REMOVAL AND REPLACEMENT OF A DEFECTIVE OR SUSPECTED DEFECTIVE REPAIRABLE COMPONENT/ITEM FROM AN ENGINE. THE REMOVED COMPONENT/ITEM TO BE PROCESSED AT AN INTERMEDIATE OR DEPOT LEVEL MAINTENANCE ACTIVITY. SEE NOTE.	72.	THIS TRANSACTION CODE WILL BE USED TO REPORT SCIP DATA BY THE REPORTING CUSTODIAN WHEN TRANSIENT MAINTENANCE IS PERFORMED BY OTHER THAN THE REPORTING CUSTODIAN.
		30.	THIS TRANSACTION CODE IS USED TO DOCUMENT COMPONENTS/ITEMS PROCESSED THROUGH THE INTERMEDIATE LEVEL MAINTENANCE ACTIVITY FOR CHECK, TEST, AND SERVICE. ANY COMPONENT/ITEM FAILING CHECK, TEST, SERVICE SHALL BE DOCUMENTED IN ACCORDANCE WITH PARAGRAPH 64050.(13).		NOTE WHEN AN ENGINE IS A SUPPLY ASSET, NOT UNDERGOING REPAIR OR INSPECTION INDICATED FROM AN ORGANIZATIONAL ACTIVITY TRANSACTION CODES 11, 12, 16, 17, 21, AND 23 MUST BE USED.

FIGURE 2.7-7 -- Transaction Codes.

- (17) Block A52 bureau/serial number (BU/SER number). Enter the bureau or serial number of the equipment or end item on which work is being performed. (See Figure 2.7-6).

- (18) Block A58 when discovered code (DISCD). Enter the appropriate when discovered code found in the work unit code manual. (See Figure 2.7-6).

- (19) Block A59, type maintenance code (T/M). Enter the type maintenance code that describes the type of maintenance being performed. Found in the

- (20) Blocks A60 through F28 will not be discussed.

REPAIR CYCLE				REMOVED/OLD ITEM		INSTALLED/NEW ITEM	
DATE	TIME	EOC	E08 MTGR	E13 SERIAL NUMBER	G08 MTGR	G13 SERIAL NUMBER	
RECEIVED	B08	B12	B16				
IN WORK	B19	B23	B27	E23 PART NUMBER	E38 DATE REMOVED	G23 PART NUMBER	
COMPLETED	B30	B34		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	
AWAITING MAINTENANCE				G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES	
B38	B39 HOURS	B43	B44 HOURS	DISCREPANCY			
MAINTENANCE/SUPPLY RECORD							
JOB STATUS	DATE	TIME	EOC				
B53	B54	B58	B62				
B65	B66	B70	B74	PILOT/INITIATOR			
C08	C09	C13	C17	CORRECTIVE ACTION			
C20	C21	C25	C29				
C32	C33	C37	C41				
C44	C45	C49	C53				
C56	C57	C61	C65				
D08	D09	D13	D17				
JOB CONTROL NUMBER				CORRECTED BY	INSPECTED BY	SUPERVISOR	
A08 ORG	A11 DAY	A14 SER	A17 SUF	UP <input type="checkbox"/>	MODEX	PRI	
				DOWN <input type="checkbox"/>	TURN-IN DOCUMENT	SYSTEM/REASON	
				MAINT CONTROL			
				MCN			

FIGURE 2.7-8 -- Bottom Section of VIDS/MAF.

(21) Repair Cycle Blocks:

(a) Received block

1. Block B08 Date - _____
_____.
2. Block B12 Time - _____
_____.
3. Block B16 EOC - Enter the appropriate EOC
that describes the specific system or
subsystem that degrades the aircraft's
_____ capability.

(b) In Work Block (See Figure 2.7-8)

1. Block B19 Date - _____
_____.
2. Block B23 Time - _____
_____.
3. Block B27 EOC - Enter the appropriate EOC
that describes the specific system or
subsystem that degrades the aircraft's
mission capability.

(c) Completed Block (See Figure 2.7-8)

1. Block B30 Date - _____
_____.
2. Block B34 Time - _____
_____.

(22) Awaiting Maintenance Reason and Hour Blocks (See Figure 2.7-8)

- (a) Blocks B38 through B49. Enter the applicable awaiting maintenance hours and reason codes for Subsystem Capability and Impact Reporting (SCIR) system related maintenance actions.

- (b) These blocks will be filled out by the work center at the end of the maintenance action or upon close out.

(23) Maintenance Supply Record Blocks (Refer to wall chart as directed by Instructor)

- (a) Blocks B53, B65, C08, etc., Job Status

1. Enter the proper alpha character prefix for any change in status.
2. "M" will be used for maintenance.
3. "S" will be used for supply.

- (b) Blocks B54, B66, C09, C21, etc. Date. Enter Julian date, the "S" or "M" situation begins.

- (c) Blocks B58, B70, C13, C25, etc. Time. Enter the time, the "S" or "M" situation begins.
- (d) Blocks B62, B74, C17, C29, etc. EOC. Enter the appropriate EOC that describes the specific system or subsystem that degrades the aircraft mission capability. SCIR related discrepancies only.

(24) Removed/Old Item Blocks, E08 through E52 (See Figure 2.7-8)

- (a) Completed on a VIDS/MAF when a repairable component/part is removed from the end item or _____ on which work is being performed.
- (b) Enter the _____, _____, and _____ in the appropriate blocks.
- (c) In block E38 enter the Julian date the repairable component/part is _____ from the equipment.
- (d) In block E42 enter the applicable time/cycle, preceded by the alpha character. The time/cycle will usually be an alpha character in the case of the AME.

- (e) Time cycle blocks E47 and E52 will be left blank.

(25) Installed/New Item Blocks G08 through G48 (See Figure 2.7-8)

- (a) Completed when a repairable component/part is installed on the end item or major component on which work is being performed.
- (b) Enter manufacturer's code, _____, and serial number in appropriate blocks.
- (c) In block G38 enter the applicable time/cycle preceded by an alpha character.
- (d) Blocks G43 and G48 will be left blank.

- (26) Discrepancy Block. Enter a _____ description of the reported discrepancy. (See Figure 2.7-8).
- (27) Corrective Action Block. Enter a narrative description of the action to correct the discrepancy. (See Figure 2.7-8).
- (28) Blocks A08 through A17 Job Control Number (JCN). Enter the job control number.

- (29) Block A19 Work Center. Enter the code of the work center performing the maintenance action described on the VIDS/MAF.
- (30) Blocks A, B, C, and D Local use. These blocks are available for local use. (See Figure 2.7-8).

- (31) CF REQ/RFI Block. This is a dual purpose block for use by the Organizational and Intermediate activities.

(a) Organizational activities will enter an (x) mark when a _____ is required after completion of a maintenance action.

(b) Intermediate activities will enter an (x) mark when the repair action is ready for issue (RFI). (Refer to wall chart as directed by Instructor).

- (32) QA REQ/BCM Block. This is a dual purpose block for use by the Organizational and Intermediate activities.

(a) Organizational activities will enter an (x) mark if the maintenance action requires a

(Maintenance Control will make this indication.

(b) Intermediate maintenance activities will enter an (x) mark if the repair action is beyond capability of maintenance (BCM).

(33) Turn-In Document Block. Enter the Julian date and requisition number on which the specific item was ordered from the _____/_____
block _____ and _____ to assist local supply control.

(34) Inspected by Block. The Quality Assurance Representative or Collateral Duty Inspector who inspects the job for proper standards signs his name and enters his rate in this block. (See Figure 2.7-8).

(35) Corrected by Block. The worker or crew leader who performs the maintenance action signs his name and enters his rate in this block. (See Figure 2.7-8).

(36) Supervisor Block. The work center supervisor or his assistant signs his name and enters his rate in this block to indicate that screening has been performed and that the _____
_____ and tool control programs have been maintained. (See Figure 2.7-8).

_____.

h. Block 8 Items Processed. Enter the number of time the support action identified in the support action code block has been performed.

i. Block 9 Man-hours. Enter the total number of man-hours (in hours and tenths) expended.

j. Block A Bureau Number/Local Control

(1) _____ bureau number is entered in this block for all support actions involving corrosion control; i.e., where the support code is 040 through 049.

(2) In other cases, this block may be used at the discretion of the local activity to record the _____ or other data of interest.

TYPE	MAINTENANCE	CODES
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
55	55	55
56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

- A GENERAL SUPPORT
- C TURNAROUND, PREFLIGHT, PREOPERATIONAL, OR PRELAUNCH INSPECTION
- D DAILY, DAILY/POSTFLIGHT, OR POSTOPERATIONAL INSPECTION
- F TRANSIENT MAINTENANCE
- L LOCAL MANUFACTURE
- T SUPPLY SUPPORT
- U RECLAMATION AND SALVAGE

३३५

1.43

- k. Block B Signature. Enter the signature of the person documenting the support action.
- l. Supervisor. Work center will check SAF for proper completion and neatness and will sign it.

C. SUBSYSTEM CAPABILITY AND IMPACT REPORT (SCIR) SYSTEM

- 1. The SCIR system is used to monitor the _____ of selected end items. SCIR is documented on the VIDS/MAF along with the _____ that caused reduction of the equipment mission capability. This system will provide:
 - a. The _____ of mission impairment.
 - b. The length of time the _____ of the aircraft was reduced.
 - c. The system or subsystem that caused the mission impairment.
 - d. The maintenance or _____ impact on the capability of the aircraft.
- 2. SCIR/NON SCIR related discrepancies
 - a. SCIR related are the maintenance actions that depict the operation of the system to the point that the mission capability of that system or subsystem was reduced.
 - b. NON-SCIR related discrepancies are those maintenance actions that have _____ impact on equipment _____, such as minor adjustments.
- 3. Equipment Operational Capability (EOC)
 - a. Whenever a system or a subsystem cannot be used for its intended function it becomes _____.
 - b. Each model or type of aircraft under the SCIR system has an equipment operational capability (EOC) code list. This list is called a Mission Essential Subsystem Matrix (MESM). (See Figure 2.7-10).
 - c. The EOC codes will be entered in the EOC column of the repair cycle and maintenance/supply record sections of the VIDS/MAF to reflect the mission capability that has been reduced.

B11 STBY UHF
 B12 SUN SHADE
 B13 VOICE RECORDER
 B14 F95 CAMERA
 B15 STBY SIGHT
 B16 UHF HOMER
 B17 CABIN ALTIMETER
 B18 ACCELEROMETER
 C30 PILOTS DISPLAY RECORDER
 C31 SIDEWINDER
 C32 SEAN
 C33 AIR-TO-AIR GUNSIGHT
 D60 AUXILARY POWER UNIT
 D61 FM RADIO
 W30 AIR-TO-GROUND GUNSIGHT
 W31 ANTI-G
 W32 ADEN GUN
 W33 STORES RELEASE (ALL STATIONS)
 X60 EXTERNAL FUEL TANKS
 X61 WHEN INSTALLED AIR REFUEL PROBE
 X62 WATER INJECT
 X63 KIT 1A
 Y11 8-DAY CLOCK
 Y12 STAB AUG
 Y13 RADAR ALTIMETER
 Y14 IFF MODES 3 & C
 Y15 STBY ATTITUDE IND
 Y16 TACAN
 Y17 HEAD UP DISPLAY
 Y18 ADC
 Y19 ATTITUDE HEADING REFERENCE SYSTEM
 Y20 LIGHTING SYSTEM
 Y21 PITOT/ANGLE-OF-ATTACK HEATER
 Z30 CANOPY/ESCAPE SYSTEM
 Z31 UHF COMM
 Z32 FUEL GAUGING AND LOW LEVEL WARNING SYSTEM
 Z33 ENGINE INSTRS
 Z34 FLIGHT CONTROL POSITIONING
 Z35 PITOT/STATIC SYSTEM
 Z36 BASIC FLT INSTRS
 Z37 OXYGEN SYSTEM
 Z38 FUEL JETTISON SYSTEM
 Z39 FUEL SYSTEM DISTRIBUTION
 Z40 FUEL STORAGE
 Z41 HYD/PNEUMATIC SYSTEM
 Z42 CENTRAL WARNING PANEL/MASTER CAUTION LITE
 Z43 ANTI COLLISION LITES
 Z44 ELECTRICAL SYSTEM
 Z45 PRESSURIZATION SYSTEM
 Z46 AIR CONDITION SYSTEM
 Z47 GTS (LESS APU)

FIGURE 2.7-10 -- Typical MESM.

JOB SHEET 2.7.1J

VIDS MAF/SAF/SCIR

TIME: _____

INTRODUCTION

The information you will receive from this job sheet will enable you to complete a VIDS/MAF from a narrative description provided; therefore, it is imperative that you remain alert and attentive during this job assignment. The coded information needed to convert the narrative description to the VIDS/MAF will be found in the Work Unit Code Manual and figures used throughout the Student's Guide.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.1, 1.6.

Supported entirely by this lesson topic:

1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10.

REFERENCES:

1. A-4 Work Unit Code Manual, NAVAIR 01-40AV-8.
2. The Naval Aviation Maintenance program (NAMP), OPNAVINST 4790.2 (latest rev.).
3. Aviation Structural Mechanic E 3 & 2, NAVEDTRA 10309 (latest rev.).

EQUIPMENT AND MATERIALS:

1. A-4 Work Unit Code Manual, NAVAIR 01-40 AV-8.
2. Notetaking Sheet 2.7.1N.

PRECAUTIONS TO BE OBSERVED: None.

JOB STEPS:

1. Complete the given VIDS/MAF following the instructions below. Refer to the work unit code manual and figures 2.7-3, 2.7-4, 2.7-5 and 2.7-7 in the Notetaking Sheet 2.7.1N.
 - a. You are assigned as crew leader in work center 13B of NAS Cubi Pt., Organizational Maintenance Division (PON). At 1000 on 17 NOV 83, between flights and during the servicing of an A-4M aircraft, bureau number 15213, you notice the liquid oxygen supply line to be contaminated with oil. You transfer that information on to a VIDS/MAF, and Maintenance Control issues you Job Control Number PON-321-115, and instructs you to go into work on the discrepancy starting at 1000.
 - b. Your next step is to assign the appropriate EOC codes to blocks B16 and B27. You then look up the part number of a liquid oxygen supply line in the NAVAIR 01-40AVC-4-6. You find the supply line on figure 140, page 295, item 27, listed as a hose assembly, liquid oxygen with a part number of 52672218; you need only 1. Next you transfer that information to the VIDS/MAF and take the VIDS/MAF to Maintenance Control to assign a priority. Maintenance Control assigns the priority AKO and routes the VIDS/MAF to Material Control for a requisition number. Material Control assigns 3321 to block 45 and G555 as the requisition number and returns the VIDS/MAF to you to fill in blocks B53, B54, B58, and B62 at 1040. You note that you have accumulated 40 minutes work hours on the VIDS/MAF.
 - c. The liquid oxygen hose assembly arrives at 1540. You pick it up from Material Control and enter the date received in block 53 which puts you back into a maintenance record in blocks B65, B66, B70 and B74. You then check out tool box #3 from your tool control center, proceed to the aircraft and remove and replace the hose assembly. You finish at 1640 and return your tool box to the tool control center and then proceed to your work center to complete the VIDS/MAF blocks A22 through A45. You then sign the VIDS/MAF and turn it into your supervisor to be inspected.

- [illegible]

SUPPORT CODES		TYPE MAINTENANCE CODES	
010	OPERATIONAL SUPPORT	A	GENERAL SUPPORT
020	CLEANING/DEPRESERVATION	C	TURNAROUND, PREFLIGHT, PREOPERATIONAL, OR PRELAUNCH INSPECTION
030	INSPECTION (EXCLUDES CORROSION)	D	DAILY, DAILY/POSTFLIGHT, OR POSTOPERATIONAL INSPECTION
040	CORROSION PREVENTION (MISC)	F	TRANSIENT MAINTENANCE
041	AIRFRAME/ENCLOSURES	L	LOCAL MANUFACTURE
042	POWER PLANTS	T	SUPPLY SUPPORT
043	PROPELLERS/HELICOPTER DYNAMIC COMPONENTS	U	RECLAMATION AND SALVAGE
044	UTILITIES		
045	ELECTRONICS/ELECTRICAL		
046	PHOTOGRAPHIC		
047	ARMAMENT/ORDNANCE		
048	SAFETY/SURVIVAL		
049	PRESERVATION		
050	GENERAL FUNCTIONS		
060	ENGINE BUILDUP, TEARDOWN, TEST STAND OPERATION		
070	MISSION SHOP SUPPORT		
080	INSPECTION OF AVIATORS EQUIPMENT, SAFETY AND SURVIVAL EQUIPMENT		
090	NON-AERONAUTICAL WORK		

ASSIGNMENT SHEET 2.7.1A

VIDS MAF/SAF/SCIR

INTRODUCTION

Organizational level maintenance activities are the prime users and operators of naval aircraft; therefore, most of their maintenance tasks involve daily support of their own operations.

To record each maintenance task properly, you must know about the forms that are used. During this lesson we are going to discuss the maintenance documents of the organizational level maintenance activity.

TERMINAL OBJECTIVE

Supported partially by this lesson topic:

1.0.

ENABLING OBJECTIVES

Supported partially by this lesson topic:

1.1, 1.6.

Supported entirely by this lesson topic:

1.1.5, 1.1.6, 1.1.7, 1.1.8, 1.1.9, 1.1.10.

STUDY ASSIGNMENT

1. Review Notetaking Sheet 2.7.1N
2. Read Aviation Structural Mechanic E 3 & 2, NAVEDTRA 10309-D, chapter 2, pages 2-2 through 2-7.

STUDY QUESTIONS

1. What is the purpose of the VIDS/MAF?
2. What is the purpose of the SAF?
3. What is the purpose of the SCIR?

4. Where will tool box inventory information be recorded on a VIDS/MAF?
5. If you were to be informed by Maintenance Control to stop working a discrepancy so another work center could complete their work, where would that action be recorded on a VIDS/MAF and what type of code would be used?
6. Who is responsible for assigning priorities to parts requisitions?
7. Where can the EOC code be located?
8. Who will sign the VIDS/MAF ensuring all entries are correct prior to submission?
9. Why are EOC codes entered onto the VIDS/MAF?

JOB SHEET 2.8.1J

MAINTENANCE OF SHOP SUPPORT EQUIPMENT

TIME: 2 periods

INTRODUCTION:

The purpose of this sheet is to guide you step-by-step in a practical work assignment in the maintenance of shop support equipment.

ENABLING OBJECTIVE

Supported partially by this lesson topic:

1.7 and 2.4.

REFERENCES:

1. Naval Aviation Maintenance Program (NAMP), Volume II, OPNAVINST 4790.2 (latest rev.).
2. Safety Precautions for Shore Activities, NAVMAT P-5100.

EQUIPMENT AND MATERIALS:

1. Tools
2. Cleaning gear

PRECAUTIONS TO BE OBSERVED:

Take all necessary steps to ensure your safety and that of the equipment.

JOB STEPS:

1. Classroom Support Equipment
 - a. Maintenance of MIARS Portable Readers.
 - (1) Clean MIARS portable reader as required.
 - (2) Repair or replace any worn parts as required.
 - (3) Recharge battery as needed.

- b. Maintenance of Publications.
 - (1) Replace any missing or worn pages.
 - (2) Incorporate any changes when required.
- 2. Field-day classroom in accordance with course instructions.

Date _____

Instructor's initials _____

UNIT 2 GRADE SHEET

<u>ASSIGNMENT SHEETS</u>	<u>NO.</u>	<u>SAT.</u>	<u>UNSAT.</u>	<u>REMARKS</u>
2.1.1A	7			
2.2.1A	10			
2.3.1A	21			
2.4.1A	10			
2.5.1A	11			
2.6.1A	5			
2.7.1A	9			

<u>PRACTICAL WORK</u>	<u>SAT</u>	<u>UNSAT</u>	<u>REMARKS</u>
2.4.1J Through 2.4.5J			
2.5.1J Through 2.5.4J			
2.6.1J			
2.7.1J			
2.8.1J			

IBM SCORE

SCHOOL AVERAGE

GLOSSARY OF TERMS

- ABORT-- To cut short or break off
- ABRASION-- A wearing or rubbing away.
- ACTUATOR-- A component used to impel action or to cause motion.
- ADAPTER-- A device that connects parts not designed to fit together; a device that extends or alters the function of an apparatus.
- AERODYNAMICS-- The branch of physics that treats the laws of motion of gases under the influence of gravity and other forces.
- AFT-- At, near, or toward the stern or rear.
- AIRCRAFT LOGBOOK-- A record or history of one aircraft, located in the maintenance control office.
- ALIGNMENT FIXTURE-- Special device used during the installation of components to preclude damage.
- AMPLIFY-- (Electronics) To increase the strength or amplitude of, as electromagnetic impulses.
- ANERIOD-- A device partially evacuated of air and sealed, which expands and contracts with changes in atmospheric or gaseous pressure.
- ANNEAL-- To reduce the brittleness of, as glass and various metals, by heating and then slowly cooling.
- ANODE-- Positive (+) electrode, as in a battery.
- ANODIZE-- To put a protective oxide film on aluminum by a process of rapid oxidation.
- ANOXIA-- An abnormally low amount of oxygen in the body tissues; the result of hypoxia.
- ANTI-ROTATION-- Preventing rotation of ability to rotate.
- APPLICABILITY-- That which can be applied.
- ARM-- To make ready for use; as installing cartridges in egress systems.
- ARREST-- To stop or check motion; as in aircraft landing aboard ship.

AUXILIARY-- To help or assist; a back-up unit or a device used to aid in movement.

AXIS-- A real or imaginary straight line on which an object actually or supposedly rotates.

BARISM-- Expansion of body gases.

BAROSTATIC CONTROL-- A device acted upon by atmospheric pressure.
EXAMPLE: Time release mechanism actuates at a set altitude.

BELLCRANK-- A device which connects several separate components within a system, for simultaneous actuation by the operation of one handle or lever.

BENDS-- A painful paralyzation, sometimes fatal disease, caused by too rapid transition from the compressed air of a (cassions) large, water-tight container in which work is done under water.

BIFURCATED-- Having two branches; forked from one.

BREECH-- The part of the firearm behind the barrel; as in the launcher breech of the ESCAPAC-1 catapult system.

BUNGEE-- Spring or elastic cord, or similar device used to control a system. EXAMPLE: Canopy pneumatic bungee.

CALIBRATE-- To graduate, correct, or adjust the scale of a measuring instrument into appropriate units.

CAM-- A part mounted on a shaft and used to impart a reciprocating or alternating motion of another part by bearing against it as it rotates.

CANNIBALIZATION-- To salvage useful parts.

CANNON PLUG-- A term used to describe an electrical connector.

CANTED BULKHEAD-- A wall or partition that slopes to the rear at the top; as in mounting an ejection seat.

CARTRIDGE-ASSISTED-- Assisted or helped by a cartridge so as to propel. EXAMPLE: Martin-Baker ejection seat.

CARTRIDGE-- A cylindrical case containing a charge; as used in an egress system.

CATAPULT-- A device used for launching; as in propelling a seat and occupant from an aircraft.

CATHODE-- Negative (-) charged electrode.

CHANGE OF STATE-- A difference in the condition as regards to structure, form, or stage of existence.

CLAMSHELL--Used in egress to describe an aircraft canopy that is hinged at the rear and opens like a clam.

CLEVIS-- A piece of metal with a hole in the end used to attach one item with another.

COMMUNICATE-- To give or receive information.

COMPOSITE-- Involving more than one.

CONCENTRIC-- Having a common center, as circles; opposed to eccentric.

CONCEPT-- An idea, thought, or common notion.

CONFIGURATION-- A joining together or being joined together; union; combination.

CONSOLE-- A bracket for supporting a shelf; in aircraft for the mounting of various components.

CONTAMINATE-- To make impure, pollute.

CROSSBEAM-- A beam placed across an area or from one wall to another.

DEPLOYMENT-- To unfold and fill out; as in a parachute descent.

DETENT-- A small cut or indenture for another component, usually in locking devices.

DISARMING-- Removing of cartridges in egress systems to make ready for maintenance.

DISSIPATE-- (1) To scatter; disperse.
(2) To drive completely away; make disappear.

DISTORT-- To twist out of usual form or shape.

DITCHING-- To make a forced landing on water, with loss of aircraft and abandonment by occupants.

DIVERT-- To turn aside (from a course); deflect.

DOCUMENTATION-- To prove or support by reference.

D-RING-- A D-shaped metal ring used to connect the harness of a parachute to the shroud lines, or for manual release of the parachute.

DROUGE-- A device, usually shaped similar to a funnel or cone, dragged or towed behind something, as a chute.

EGRESS-- A way out; exit; as in egress systems in an emergency.

EJECTION SEQUENCE-- The order of events during an ejection of the pilot and seat from the aircraft.

ELECTROMAGNET-- A soft iron core that temporarily becomes a magnet when electric current flows through the coil surrounding it.

ELECTROLYTE-- Make capable of conducting an electrical current (salt, water, etc.).

ELONGATE-- To lengthen, widen, stretch, spread, or cause an area or hole to become out of proportion.

EMULSION-- A fluid formed by the suspension of one liquid in another.

ENVELOPE-- The minimum and maximum limitations for a safe ejection from an aircraft. EXAMPLE: 130-150 knots and ground level to 50,000 feet.

ERRONEOUS-- To be in error (wrong).

ESCAPAC-1-- Complete seat and rocket manufactured by Douglas Aircraft Corp.

EXTRACTOR-- A gas-operated mechanism used to release the firing pin of another mechanism, such as in the canopy remover (FJ).

FACILITATE-- To assist; lighten the work.

FACE CURTAIN-- The primary means of ejecting a seat and occupant; gives body positioning and face protection.

FIELD DIRECTIVES-- Maintenance guides used in operational activities (squadrons) EXAMPLE: (1) aircraft service change, (2) aircrew systems bulletin, (3) aircrew systems change (guidance for components change).

FUNCTION-- The normal or characteristic action of anything, a special duty or performance required of a person or thing in the course of work.

"g"s -- A unit of measurement for bodies undergoing acceleration. EXAMPLE: A pilot weighs 200 lbs.; at 4 g's his weight is 800 lbs.

GUILLOTINE-- An instrument used for severing, consisting of a heavy blade, mounted between two grooved uprights.

HERMETICALLY SEALED-- Sealed so as to be airtight; as in the hermetically sealed initiator charges and cartridges.

HORIZONTAL-- (1) parallel to the plane of the horizon; opposed to vertical. (2) Placed or acting chiefly in a horizontal position. (3) Flat and even; level.

HYDROCARBON-- One of a large and important group of organic compounds that contain hydrogen and carbon only.
EXAMPLE: Grease and oil.

HYPOXIA-- A deficiency in the amount of oxygen that reaches the tissues of the body.

IGNITER-- To set fire to; to heat to a great degree.

IMPEL-- To push, drive, or move forward.

IMPLEMENT-- Action required for setting up a plan, order, regulation, or the like upon a practical or smooth-running basis.

INERT-- (1) Without power to move or to resist an opposing force.
(2) Inactive; dull; slow (3) with few or no properties.

INERTIA-- The tendency of matter to remain at rest (or to keep moving in the same direction) unless affected by some outside force; in egress, aircraft occupant controlled by an inertia reel.

INITIATING-- Beginning; commencing.

INITIATOR-- To bring into practice or use; in an egress system, it is a hermetically sealed cartridge device.

INJECT-- To drive or force into something.

INTEGRAL-- (1) Necessary for completeness; essential.
(2) Whole or complete.

INTEGRATE-- (1) To make whole or complete.
(2) To bring (parts) together into a whole; unify.

INTEGRITY-- The condition or quality of being unimpaired or sound.

INTERLOCK-- To lock together; join with one another; as in the interlock cam and pin assembly on the ESCAPAC-1.

INTERMEDIATE-- Situated or occurring between two points, places, level, etc.

INTERRUPTER-- To make a break in the continuity of; obstruct.

ISOBARIC-- One barometric pressure.

ISOLATE-- To set apart from others; place alone.

ISOMETRIC-- Indicating or having equality of measure.

JACKSCREW-- A machine used to move heavy things, operated by turning a screw; as in an electrically actuated canopy actuator.

JETTISON-- To throw overboard; discard; as to jettison the canopy.

KINETIC-- Of or pertaining to motion.

KNOT-- One nautical mile (6,076.1033 feet).

LEAD SEAL-- Small piece of lead used in conjunction with lockwire to identify maintenance personnel and maintenance activity.

LEG GARTERS-- Worn by an ejection seat occupant in conjunction with leg restraint lines, for leg control during ejection.

LEGIBLE-- (1) Capable of being read or deciphered; easy to read.
(2) Readily perceived or discovered from apparent signs of evidence.

LIAISON-- Coordination between military forces.

LITER-- In the metric system, a measure of capacity equal to the volume of one kilogram of water at 4° C., and normal atmospheric pressure, or to 1.0567 liquid quarts.

LOCKING DOGS-- (1) Anything that fastens something else and prevents it from operating. (2) A locking together; jam.

LOOP STRAP-- Nylon webbing connecting inertia reel and occupant of aircraft seat, to control upper body movement.

LOT NUMBER-- A number assigned to a quantity of items by the manufacturer to identify any single item belonging to that group.

MALADJUSTMENTS-- Poorly or not properly adjusted.

MANDREL-- A cylindrical device used to expand tubular components.

MARINER'S MEASURE-- 6 feet = 1 fathom
1,000 fathoms = 1 nautical mile
3 nautical miles = 1 league

MARTIN-BAKER-- A British-designed ejection seat.

MICRON-- A unit of measurement equal to one thousandths of a millimeter. 760,000 microns = 14.7 p.s.i.

MODULATE-- To vary the position.

MONITOR-- To watch or check.

M.R.C.-- Maintenance Requirement Card; used for periodic upkeep of aircraft.

NAVAIRSYSCOM-- Naval Air Systems Command.

NEGATIVE PRESSURE-- Pressure that is less than existing atmospheric pressure taken as a zero of reference.

NEOPRENE-- Any of various types of synthetic rubber.

NOMENCLATURE-- The name or description of something.

NONFERROUS-- Containing no iron or not derived from iron.

NONMETALLIC-- Lacking the characteristics of metal.

NONTOXIC-- Not poisonous.

OPERATIONAL-- The act, method, or process of operating; the condition of being in action or at work checking operation of.

OPTIMUM-- The best or most favorable degree, condition, amount, etc.

ORIFICE-- A calibrated opening or outlet.

OVERSTRESS-- To exceed the maximum capabilities or capacitance of an item; overstrain; too great a load.

PAINTER-- A rope with which to fasten a boat by its bow.

PARALLEL-- Extended in the same direction and at a constant distance apart.

PARAMOUNT-- Ranking higher than any others (peak).

POPPETS-- A valve that moves up out of and down into its port.

PRESSURE-- Physics-- The force acting upon a surface per unit of area.

PREVENTIVE MAINTENANCE-- Locating and correcting minor discrepancies before they become major repairs.

PRIMER-- A small cap or tube containing an explosive used to fire main charge.

PROCURE-- To order or obtain.

PROPELLANT-- Something which pushes onward or forward; as in propellant (charge) in a catapult.

PROTRUDING-- Projecting outward.

PURGE-- To cleanse of what is impure or extraneous; purify.

QUICK-RELEASE PIN-- A cylindrical length of metal which is used to provide rapid and sure connection and disconnection of an item.

RANGES-- The limits of possible variations of amount or degree.

RAPEC-- Rocket-Assisted Personnel Ejection Catapult; pertaining to the rocket.

RATCHET-- A hinged catch or pawl that engages with a toothed wheel or bar whose teeth slope in one direction, thus preventing backward movement.

REBOUND-- To bound or spring back; as upon impact.

RESPONDS-- To act in return, as if in answer; reaction, as to a stimulus.

RETENTION-- A retaining or being retained; power of or capacity for retaining.

ROCKET-ASSISTED-- Assisted by a rocket to cause propulsion.
EXAMPLE: ESCAPAC ejection seat.

SAFETY PIN-- A tubular length of metal having on one end a means for locking it in position; used to prevent accidental actuation of a component.

SAFETY WIRE-- A wire normally constructed of high-strength metal, and used to prevent movement of components caused by vibration, etc.

SEAR-- A device used to hold the firing pin of the firing mechanisms in a cocked position.

SEGMENTED-- Separated or divided into segments.

SERRATED-- Having sawlike teeth or notches along the edge.

SERVICE LIFE-- The period of time an item or part should remain useful or continue to operate properly without failure, normally assigned by the designer or manufacturer of items.

MICRON-- A unit of measurement equal to one thousandths of a millimeter. 760,000 microns = 14.7 p.s.i.

MODULATE-- To vary the position.

MONITOR-- To watch or check.

M.R.C.-- Maintenance Requirement Card; used for periodic upkeep of aircraft.

NAVAIRSYSCOM-- Naval Air Systems Command.

NEGATIVE PRESSURE-- Pressure that is less than existing atmospheric pressure taken as a zero of reference.

NEOPRENE-- Any of various types of synthetic rubber.

NOMENCLATURE-- The name or description of something.

NONFERROUS-- Containing no iron or not derived from iron.

NONMETALLIC-- Lacking the characteristics of metal.

NONTOXIC-- Not poisonous.

OPERATIONAL-- The act, method, or process of operating; the condition of being in action or at work checking operation of.

OPTIMUM-- The best or most favorable degree, condition, amount, etc.

ORIFICE-- A calibrated opening or outlet.

OVERSTRESS-- To exceed the maximum capabilities or capacitance of an item; overstrain; too great a load.

PAINTER-- A rope with which to fasten a boat by its bow.

PARALLEL-- Extended in the same direction and at a constant distance apart.

PARAMOUNT-- Ranking higher than any others (peak).

POPPETS-- A valve that moves up out of and down into its port.

PRESSURE-- Physics-- The force acting upon a surface per unit of area.

PREVENTIVE MAINTENANCE-- Locating and correcting minor discrepancies before they become major repairs.

PRIMER-- A small cap or tube containing an explosive used to fire main charge.

PROCURE-- To order or obtain.

PROPELLANT-- Something which pushes onward or forward; as in propellant (charge) in a catapult.

PROTRUDING-- Projecting outward.

PURGE-- To cleanse of what is impure or extraneous; purify.

QUICK-RELEASE PIN-- A cylindrical length of metal which is used to provide rapid and sure connection and disconnection of an item.

RANGES-- The limits of possible variations of amount or degree.

RAPEC-- Rocket-Assisted Personnel Ejection Catapult; pertaining to the rocket.

RATCHET-- A hinged catch or pawl that engages with a toothed wheel or bar whose teeth slope in one direction, thus preventing backward movement.

REBOUND-- To bound or spring back; as upon impact.

RESPONDS-- To act in return, as if in answer; reaction, as to a stimulus.

RETENTION-- A retaining or being retained; power of or capacity for retaining.

ROCKET-ASSISTED-- Assisted by a rocket to cause propulsion.
EXAMPLE: ESCAPAC ejection seat.

SAFETY PIN-- A tubular length of metal having on one end a means for locking it in position; used to prevent accidental actuation of a component.

SAFETY WIRE-- A wire normally constructed of high-strength metal, and used to prevent movement of components caused by vibration, etc.

SEAR-- A device used to hold the firing pin of the firing mechanisms in a cocked position.

SEGMENTED-- Separated or divided into segments.

SERRATED-- Having sawlike teeth or notches along the edge.

SERVICE LIFE-- The period of time an item or part should remain useful or continue to operate properly without failure, normally assigned by the designer or manufacturer of items.

SHEAR-- (1) To cut, as with shears. (2) To break under a shearing stress.

SHEAR WIRE-- A wire of soft metal, normally copper or aluminum, designed to break under a calibrated amount of stress.

SHOP RECORD-- Complete up-to-date ready reference of units or components maintained by a shop or work center, as to parts, maintenance, replacement, etc.

SIMULTANEOUS-- Occurring at the same time.

SNUBBER-- A device which checks the movement of something; as used in the Martin-Baker shoulder harness mechanism.

SOLENOID-- A conducting wire in the form of a helix, capable of setting up a magnetic field by the passage through it of an electric current.

SOLVENT-- A substance used to dissolve another substance.

SPRING-LOADED-- Something which is acted upon by spring tension; as in a spring-loaded switch that will return to the OFF position when released after being physically held in the ON position.

SUBSISTENCE-- Means of support or livelihood.

SUSTAINER-- (1) To maintain; keep in existence; (2) to keep supplied with necessities; provide for; (3) to support; carry the weight of.

SYMMETRICAL-- Similarity of form(s) on either side of a dividing line.

TANG-- A projecting shank or prong on a chisel, file, etc., to fit into the handle.

THERMOCOUPLE-- A device for temperature measurement that depends upon the electric current or potential produced when joined conductors of two different metals have their ends at different temperatures.

THRUST-- A forceful push or continuing pressure exerted by one part against another.

TOLERANCE-- The amount of variation allowed from a standard, accuracy, etc.; specifically, the difference between the allowable maximum and minimum sizes of some mechanical parts.

TORQUE-- A force, or combination of forces, that produces twisting or rotating motion.

TRAJECTORY--- The path of an object hurtling through space; in egress--a seat and occupant.

T.R.M.--- Time Release Mechanism.

TRUCKS-- Rollers mounted in a bracket that travels along tracks in a sliding canopy.

TRUNNION-- Either of two projecting journals on each side of something, on which an item pivots.

UNSERVICEABLE--- That which will not give good service; not durable.

UPSTREAM-- Against the direction of flow.

UTILIZATION--- To make use of.

UTILIZING--- To make useful; turn to.

VELOCITY-- Speed-- Rate of motion in a particular direction, in relation to time.

VERIFICATION--- The confirmation of the truth of a fact, theory, etc.

VERTICAL-- (1) Of or at the vertex, or highest point; directly overhead. (2) Perpendicular to the plane of the horizon; upright.

VISCOSITY--- Liquid--- The property of internal resistance caused by molecular attraction that makes liquid resist flow.

VISUAL INSPECTION-- To inspect visually; to look at carefully, to determine existence of discrepancies.

ENTRIES REQUIRED SIGNATURE

WORK CENTER MDR VERIFICATION COPY

USE BALL-POINT PEN PRESS HARD

NONE LOGS REC

VIDS/MAF OPNAV 4790-60 (REV 2-82) S. N 0107-LF-047-9304

[illegible]

COPY 5

5 PART FORM

USE BALL-POINT PEN PRESS HARD

ENTRIES REQUIRED SIGNATURE

NONE LOGS REC

☐ ☐ ☐

WORK CENTER MDR VERIFICATION COPY

VIDS/MAF OPNAV 4790/60 (REV. 2-82) S/N 0107-LF-047-9304

[illegible][illegible]

- FOLD -

[illegible]

REPAIR CYCLE				REMOVED/OLD ITEM			INSTALLED/NEW ITEM		
DATE		TIME	EOC	E08 MFGR	E13 SERIAL NUMBER		G08 MFGR	G13 SERIAL NUMBER	
RECEIVED	B08	B12	B16						
IN WORK	B19	B23	B27	E23 PART NUMBER		E38 DATE REMOVED	G23 PART NUMBER		
COMPLETED	B30	B34		E42 TIME/CYCLES		E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES
AWAITING MAINTENANCE									
B38 B39 HOURS B43 B44 HOURS B48 B49 HOURS									

MAINTENANCE/SUPPLY RECORD				DISCREPANCY
JOB STATUS	DATE	TIME	EOC	
B53	B54	B58	B62	
B65	B68	B70	B74	
C08	C09	C13	C17	
C20	C21	C25	C29	
C32	C33	C37	C41	
C44	C45	C49	C53	
C56	C57	C61	C65	
D06	D09	D13	D17	

PILOT/INITIATOR

CORRECTIVE ACTION

CF REQ	QA REQ
<input type="checkbox"/> RFI	<input type="checkbox"/> ECM

JOB CONTROL NUMBER				A18 WORK CENTER		CORRECTED BY		INSPECTED BY		SUPERVISOR		MAINT CONTROL			
A08 ORG		A11 DAY		A14 SEN		A17 SUF		UP <input type="checkbox"/> DOWN <input type="checkbox"/>		MODEX		PRI			
								TURN-IN DOCUMENT		SYSTEM/REASON				MCN	

